The
Home Garden Handbooks

ROCKWELL

Evergreens

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EVERGREENS

FOR THE SMALL PLACE

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By

F. F. Rockwell

SHRUBS
GLADIOLUS
EVERGREENS FOR THE
SMALL PLACE
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IRISES
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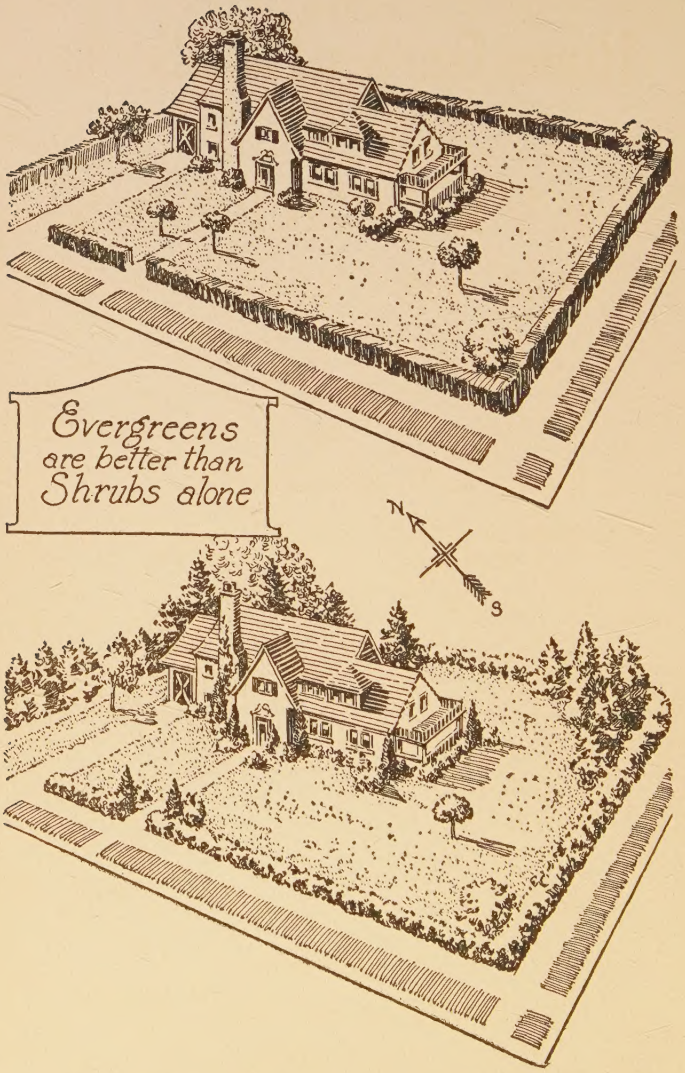

Evergreens are the most profitable of all plants as a permanent investment.

The
Home Garden Handbooks

EVERGREENS
FOR THE SMALL PLACE

BY

F. F. ROCKWELL

AUTHOR OF "AROUND THE YEAR IN THE GARDEN,"
"THE BOOK OF BULBS," "SHRUBS,"
"GLADIOLUS," ETC.

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TO

MY GOOD FRIEND

PETER M. KOSTER

Former President of the Eastern Nurserymen's Association, who has devoted an energetic lifetime to the widest interests of horticulture, this little book is dedicated.

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HOW TO USE THIS BOOK

THIS is one of the Home Garden Handbooks. Like its companion volumes in the series it is designed to give, in as few words as possible, the information needed to enable you to succeed with one important garden task.

THIS BOOK IS DESIGNED TO BE USED WITH THE CATALOGS OF RELIABLE NURSERYMEN. There you will find illustrated, sometimes in color, not only all the varieties and types of evergreens mentioned here as suitable for the small place, but many of the rarer sorts and those suitable for special purposes.

Read the opening chapters of the book, with their suggestions on where and how to use evergreens, with the catalogs before you, when you make out your order; and the succeeding chapters on the planting and care of your trees, before you actually set them out. Then you'll come back to the book again and again as you take care of your plantings and add to them year by year.

The Home Garden Handbooks make it possible for every garden-lover to build his library a little at a time, as he does his garden, at moderate cost, knowing as he goes along that it is founded on reliable informatio

The greatest care has been taken to make the index as complete as possible so that the reader may find immediately all the information given on any particular point, even though it is referred to in several places in the book. Get the habit of consulting your Home Garden Handbooks while you are doing the work!

INTRODUCTION

By Harlan P. Kelsey

Ex-President American Association of Nurserymen

At last "The Garden in America" is coming into its own. Never before has there been such universal interest in growing things. The *desire* for living plants among Americans of all classes is at last fully awakened.

Properly planning the out-of-doors part of the home is now recognized to be quite as important as for the house itself, while the effects often give greater joy and satisfaction. The best results of all are to be had when the owner, the landscape gardener, and the architect work together. Yet the only way to secure the charming individuality so desirable in the home, and shun that bleak standardization of arrangement and design which is the common curse of American domestic living conditions, is for the owner himself to dominate the problem and insist that his preferences in material and to a reasonable extent in design, be worked into the landscaping.

Even where professional advice is employed, the owner cannot expect to coöperate intelligently or secure good results *unless in advance he acquaints himself with plant material,* and has some knowledge at least of the fundamental principles of good landscape design; where he himself does the planning and planting, such knowledge is indispensable.

To all such the present volume is a timely and friendly guide and mine of information, presented in such a non-technical way as to be easily understood and readily followed; for the author is a horticulturist who has wide knowledge of plant material and of its proper use in home-building.

To-day evergreens, both conifers and broadleaf, are coming

to be more adequately appreciated for their contrasting and abiding qualities the year round, as well as for their intrinsic beauty of form, color, foliage, flower, and fruit. This book does not give, nor does it pretend to give, complete lists of all available evergreens. Such a list would be too large and would tend to defeat the author's purpose: namely, to describe the kinds readily obtainable and tell how to use them correctly and effectively. Many new and wonderfully beautiful evergreens are being introdced to American gardens, particularly by "America's Greatest Garden," the Arnold Arboretum, and will gradually come into general use.

Look out for the "foundation-planting" protagonist, who has principally conifers for sale and would clothe the bases of all our houses with a solid mass of them—tall, short, wide, narrow—with little or no regard for future results. A mixed planting of evergreens, deciduous shrubs, and hardy herbaceous plants properly selected and spaced is nearly always much more interesting and beautiful than a solid mass of evergreens.

Many such a planting actually looks attractive when planted—*for the first two or three years!* Then the murder begins to out. The large-growing sorts crowd out and stunt or kill the dwarfer varieties and themselves become "leggy" and spindly, until finally the whole sorry mess is dug up and thrown on the brush pile. Years have been lost and replanting becomes necessary.

Large-growing conifers are annually sacrificed by tens of thousands on this altar of bad business practice. With the plant knowledge to be gained from this volume and care in buying, this pitfall may be avoided, and disappointment and loss averted.

For the help and comfort of his readers, Mr. Rockwell wisely has adopted "Standardized Plant Names" as his authority for both common and technical names. In this manner is the "confusion of tongues" in the horticultural plant world disappearing, and joy in our gardens is all the greater when we can talk about our cherished treasures in a universal language.

CHAPTER I

EVERGREENS FOR YEAR-ROUND BEAUTY, COMFORT AND CHEER

It has been said that no home is complete without planting. It may also be said that no planting is complete without evergreens.

The well-planted home which has evergreens *outside* through all the winter months, rather than inside merely for a week or two, carries something of a perpetual Christmas hospitality. One returns to it always gladly, and drifting snows and blustering winds only add to the cheeriness and welcome which surrounding evergreens give. The most elaborate landscaping, the most extensive and expensive planting of flowers and shrubs, presents but a dreary and uninviting appearance in winter, if there are no evergreens with their green plumes held aloft in stalwart challenge to the white knights of the snow king!

And so, for their winter cheer alone, if for no other reason, would the generous planting of evergreens be well worth while. But there is, in fact, more variation in color, and beautiful color, in evergreens than in deciduous trees. In addition to every imaginable shade of green, they give us, either in part or in whole, gold, silver, white, yellow, blue, gray, and many variations of these hues.

In springtime, when they are putting forth their new shoots, they are particularly beautiful, the tender tones of the fresh growth contrasting vividly with the intense depth of the old branches from which they spring. The Nordmann Fir, itself a rich dark green, puts out new growth six to ten inches long. The end of each feathery branch is a bright gold, a

combination of color which is astonishingly lovely. The Mugho Pine looks as though it were set with scores of little upright white candles.

But the service of evergreens to the home owner does not stop with their beauty alone. They possess other qualities, which make them an invaluable part of almost any landscape planting. There is, for instance, that intangible but very real thing called "atmosphere" which makes one home—the house and grounds together—different from another.

Everyone realizes that some places have a certain charm and dignity, a character and personality, which others do not possess. Such places, even though they may be far from pretentious, inevitably attract the attention and admiration of the observer.

One reason why evergreens help to give character to a place is that we naturally associate them with *permanence.* They stay; and their presence suggests the kind of people who stay. Go back to the old home town, and you will find the evergreens of your boyhood still there, sheltering the same homes—cool tents of green in summer, staunch barricades against the winds of winter!

Building the Garden Picture

In one other respect, the evergreens are unsurpassed.

In any landscape planting, on no matter how small a scale, it is desirable to have certain plants which will stand out strongly—"accent" plants. These are plants of pronounced shape or habit of growth, and of such "weight" as to predominate in the planting. These plants are given the most important positions or locations. For this purpose, evergreens are unsurpassed. Whether used singly or in groups, they are always the most impressive trees in a planting—*and their beauty remains the year around.*

The planting of any place should form a complete view or picture which will be pleasing when looked upon as a whole.

A picture made with living plants, like a picture painted on a canvas, shows to the best advantage when it is *framed*—

when there is a natural boundary line or stopping place for the eye of the observer which helps to focus his attention within its limits. Here, again, the various evergreens offer to the planter material for which no satisfactory substitute is to be found. This does not mean, of course, that the entire place should be surrounded by a closely set row of evergreens. But a reasonable number of evergreens, used in conjunction with other trees, will help as nothing else can to give the place an air of unity, and a finished appearance.

The Usefulness of Dwarf Evergreens

Suburban properties, while multiplying in numbers, have been shrinking in size.

For this reason it is impossible in many cases to use tall-growing evergreens, the grand old forest trees—"The murmuring pines, and the hemlocks"—familiar to every one. But the fact that the ground on which we must do our planting is limited in size does not lessen the desirability of having evergreens. And fortunately there are available many small-growing, and even dwarf, varieties of evergreens which can be used. These trees, while they may lack the grandeur of their stalwart relatives, possess the same beauty of foliage and of coloring. Many of them have a true treelike shape, or habit of growth, but in miniature. These are especially valuable in the general planting of a small place, as they give much of the *effect* of larger evergreens.

Evergreens there are, in brief, which will fit into all conditions. The problem of the home owner is not so much to decide whether he should plant evergreens as to select those which will best fit into his own planting scheme. And that is the question with which the first chapters of this book deal. The concluding chapters give suggestions concerning their successful culture.

CHAPTER II

EVERGREENS FOR EVERY PURPOSE

Some of the reasons for the universal appeal of evergreens have been mentioned in the preceding chapter. For any or for all of these, almost every home owner decides, sooner or later, to plant some evergreens.

That decision is easy; but when it comes to the question of just what evergreens to plant and where to plant them, the problem grows more complicated. Certainly it appears so to the amateur who, with little or no previous experience, is unfamiliar with types and varieties. The purpose of this chapter is to show the beginner the first step toward evergreen satisfaction.

Let us, for the moment, forget all about the tangle of species and varieties and their unaccustomed Latin names. Let it suffice that we know that there are evergreens of many shapes and sizes, characters, and color tones. They are, in a way, like the different pieces which form a cut-out puzzle, and our problem is to find the right one to fit into the right place.

The Different Parts which go to Make up a Landscape Planting

Every landscape planting is made up of several different parts.

These various parts or sections include the *foundation planting,* around the base of the house; the *border planting,* around the boundaries of the property; small *groups* of plants, set apart by themselves; *individual trees,* standing singly; and, possibly, *hedges* to separate some parts of the grounds from others, or *edgings* to mark permanently certain lines.

Certain evergreens are well suited to each of these forms of planting, but not all evergreens are adapted to all of them.

Foundation
Windbreak
Screen
Hedge
Specimen
Group Planting

It is evident, for instance, that a tall-growing, stately tree, which may eventually reach a height of thirty or forty feet, would not be suitable for planting under a window next to the house. The attractiveness of the finished planting will depend upon the judgment and the taste used in selecting the right type of evergreens for each of the several purposes wanted.

The accompanying illustrations show how the landscape planting is made up of the several "pieces" or sections mentioned above, and also indicate the type or form of evergreens adapted to each part.

The Foundation Planting

At present, the most important as well as the most popular use of evergreens in home beautification is for foundation planting—the planting around the base or foundation of the house, and close to it. Often evergreens exclusively are used for the purpose; as explained later on, it is generally advisable to plant some of the flowering shrubs with them. The subject of foundation planting is of such importance that it is discussed in detail in a separate chapter.

Evergreens in the Boundary Planting

The boundary or border planting more or less follows the boundary line of the place, or the section of the place which is being landscaped. Like the frame around a picture on the wall, the boundary planting adds a sense of finish and completeness which would be lacking without it, and tends to concentrate the attention of the observer upon what is in the frame. Moreover, in landscaping, the boundary planting serves as a background for all the other plants, as they are viewed from *within* the area. There is not space here to take up at length the principles of landscape arrangement, but most small places should have a more or less continuous band of planting along the boundary line. How continuous and how tall this should be, how dense, and where provided with gaps or openings to form attractive vistas to desirable views *outside* of the property, depends upon existing local conditions.

Screens. Most boundary-line plantings are for the double purpose of enclosing or screening the area to be planted, and of furnishing a background for lower growing and flowering plants, particularly flowering shrubs and hardy perennials.

Sometimes the boundary planting is made up of evergreens alone; but ordinarily a planting of this sort is too heavy and too dense. More often, however, the boundary planting goes to the other extreme and consists only of desiduous shrubs and trees, with the result that it is bare and uninteresting during the winter. As a general rule, which it is safe to follow, the border planting for a fairly large place may consist of tall-growing shrubs, with a few deciduous trees and some medium or tall-growing evergreens. For the average small suburban or city place, shrubs and evergreens of medium height are best.

In associating evergreens with trees and shrubs, guard against spacing evenly single plants, as this is sure to produce a stilted, unnatural effect. Set evergreens in groups of at least three, and better, five or more, at irregular intervals. If they are placed at the more important positions, such as at the corners, or framing openings for vistas, the results will be still more pleasing.

The Windbreak. The evergreen windbreak or shelter border, on the other hand, should be as dense as possible. If there is space, it may be planted as a small grove, giving a naturalistic appearance; but generally it must stand out frankly for what it is—a protecting fence of living green.

Such shelter plantings placed to the north or northwest, where they cut off the prevailing winter winds, yield a degree of protection which is almost inconceivable to the person who has had no experience with them. Both the grounds and the residence will be much more comfortable during the winter months than without a windbreak, and the garden will be a different place in March and early April! The other plants and flowers about the place are greatly benefited by the protection given. An evergreen windbreak will pay a high rate of interest on the original investment just in the fuel it saves.

Hedges. No hedges are so permanent and so beautiful as those made with evergreens. The world-famous old gardens

of England owe their reputation largely to the thick evergreen hedges which are their most characteristic feature. It is not possible to grow hedges of English yew or of boxwood in all parts of the United States, but we have hardier yews and other evergreens equally suitable for hedge-making, which will thrive anywhere.

A hedge, of course, may be of any shape or size and used for any one of a score of purposes. If it is tall and dense, it may combine the qualities of a windbreak, a screen, and a hedge, all in one. Or it may be so dwarf and formal as merely to trim the flower beds and walks, in which case it is usually referred to as "edging," rather than hedging.

Because they give quick results, and also because they are cheap, such easily grown shrubs as California Privet and Japanese Barberry have been used universally in America as hedge plants. There are thousands upon thousands of fine residences where existing privet and barberry hedges might be replaced by evergreen hedges, with immeasurable improvement in the appearance of the planting, and with an increase in value which would repay the replacement many times over.

Evergreen Groups

One of the most effective methods of using evergreens is to plant them in small groups, standing apart by themselves from other sections of the landscape planting. Considering the results obtainable and the cost, this method of using evergreens is more neglected than any other.

On even the smallest place usually there is a chance to have at least two or three of such groups. On the larger place, of course, such opportunities multiply. Good taste, however, is vital in placing and arrangement. The evergreen group should never be "dragged in by the heels," just for the sake of putting it somewhere in the planting. Select a spot where it will *look natural*—in corners of the grounds, at the entrance to driveways or paths, in the curve of a walk, at either side of steps in a terrace, such are the locations where evergreen groups are best used. In the formation of such groups, care should be taken to select varieties which

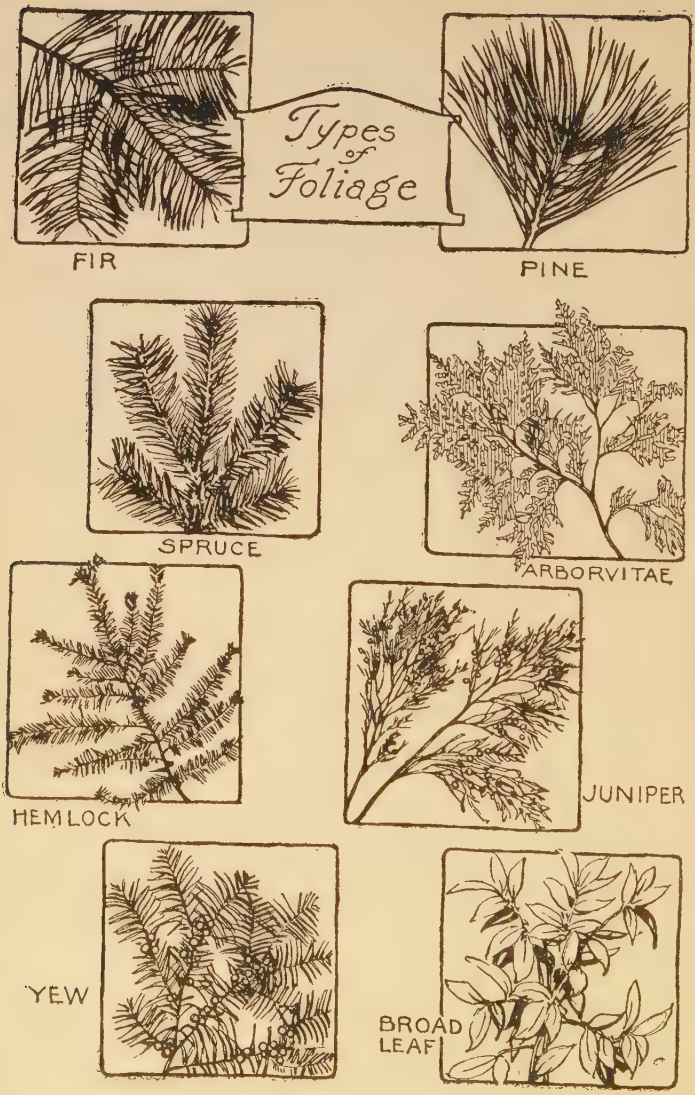
give interesting combinations in height and contour (see page 17).

Individual Specimens

Trees for "specimen" planting, as they are called in the catalogs—that is, those which are planted singly, to stand out by themselves—are given, by their very isolation, the most prominent places in the entire planting. On a small property there may be room for but one or two such trees. On larger grounds, they determine, more than any other part of the planting, the general character and effect of the entire landscaping. The taller-growing evergreens, such as firs, spruces, and pines, are unquestionably the most effective trees to use as individual specimens when the year-around effect is considered. If, however, they are employed to the exclusion of the deciduous ornamental trees, the effect is likely to be somewhat somber and heavy, and summer shade may be lacking. Moreover, evergreens are bulkiest near the ground. For these reasons, it is usually best to locate individual evergreen trees *at the sides, or even at the back* of the residence, reserving for the lawn areas in front the deciduous ornamental trees, many of which, such as elms or maples, will give a view of the house *underneath* their spreading tops. Not infrequently it is possible to move evergreens which have been wrongly located, when first planted, to the sides or rear of the house.

Evergreens for the Rock Garden

The rock garden, which has taken such an astonishing forward jump in popularity during recent years, offers an unusual opportunity for the skillful use of evergreens. Some writers on rock gardening have said that evergreens are not suitable for rock-garden planting. Any such statement shows the ignorance of the writer concerning either evergreens, or rock gardens, or both. The Japanese employ evergreens universally in their rock-garden landscapes; even for the Alpine type of rock garden, evergreens are usually desirable for the background or setting, and certain of the dwarf and procumbent varieties, in the garden itself.


Types of Foliage
FIR
PINE
SPRUCE
ARBORVITAE
HEMLOCK
JUNIPER
YEW
BROAD LEAF

(This interesting subject is covered more fully in the Home Garden Handbook on "Rock Gardening," to which the reader is referred.)

The Evergreen Garden

Last, but by no means least in its potential possibilities, among the uses for evergreens is the "evergreen garden." To many this term may yet be a meaningless phrase. Let me explain, therefore, that it is possible to make a real and very delightful garden entirely of evergreens. For to any one who is especially interested in evergreens, such a garden is possible and is not at all prohibitive in expense. Small-sized plants may be used to start with, and the "upkeep" is little.

It must be understood that the evergreen garden is by no means the same as the Arboretum or Pinetum, where the plants are set out as a collection of individual specimens, principally for comparative study. The evergreen garden is primarily a garden in which evergreens are used as the predominant, if not the exclusive, material for planting. One who has never visited such a garden can have but a faint conception of the indescribable charm it may possess.

The wide range of color tones in the foliage, as well as the remarkable differences in size, shape, and habit of growth, among the various species and varieties, provide ample material for endless garden effects. The new spring growth of some varieties is quite as beautiful as the flowering of other plants. The flowers of some evergreens, the cones or berries of others, add a fascinating note. And the evergreen garden has one distinct advantage over other gardens—it is a twelve-month-in-the-year garden, which, to a greater extent than any other, maintains its interest from New Year's until Christmas.

Lists of evergreens that are particularly suited to the purposes discussed in this chapter will be found in Chapter XII. The Index gives page numbers where descriptions of the different varieties mentioned in the lists may be found.

CHAPTER III

FOUNDATION PLANTINGS OF EVERGREENS

A "FOUNDATION planting" is a planting made around the foundation or base of the house. It is, as we have seen, one of the distinct units or parts which make up the complete planting.

The foundation planting is, in some respects, the most essential part of the planting. There is always room for a few plants around the base of the building, even though lack of space may make impossible any other planting. Since the foundation planting is more closely associated with the building than any other, it is also the most conspicuous. Its presence or absence cannot but be noticeable at the first glance even to the most casual observer; and the impression which it makes, favorable or otherwise, is sure to be felt.

American gardening has now reached the stage where the foundation planting is almost as much taken for granted as the path to the front door. The residence is not quite complete without it.

This acceptance of the foundation planting as part of the finishing of the home is a step in the right direction. Eventually, we will realize that attractive landscaping of the place outside is quite as essential in the making of a real home as what is done inside. This truth has not impressed itself upon us yet. But the foundation planting at least has achieved a place as one of the necessities, and is usually the first thing considered in planting.

WHAT ARE EVERGREENS?

So far, we have not attempted to define the different classes of evergreens. The object has been to avoid descriptions,

"The home which has evergreens . . . carries something of a per-
petual Christmas spirit."

How much more attractive than fences or individual privet hedges! A good example of the possibilities of a little neighborly co-operation in planting.

which might complicate the other points under consideration. It may be well, however, to point out here that the term "evergreens" includes several classes of plants other than such trees as spruces, firs, pines, and cedars, which the beginner usually thinks of as evergreens. For our purpose, evergreens may be separated into two groups—narrow-leaved (or coniferous) evergreens, and broad-leaved evergreens.

The coniferous evergreens are, as the name implies, the cone-bearing group; though some of them, such as the junipers and yews, have berries. Most of them have needlelike or narrow leaves; they include spruces, pines, and the like.

The broad-leaved evergreens are large or small shrubs with evergreen foliage, such as rhododendrons, laurel, boxwood, and some of the hardy azaleas. The term "evergreens" is a relative one; some shrubs and trees are evergreen in the South, but shed their leaves farther North.

In this book we are concerned primarily with the coniferous evergreens. The broad-leaved sorts are covered in another volume of the Handbook series. They are mentioned here, however, as they all have their place in the foundation planting.

The Purpose of the Foundation Planting

The object of the foundation planting, of course, is to make a more beautiful setting for the residence. A well-planted foundation planting accomplishes this in three ways.

First, it gives the house a base: the foundation planting (unlike other forms of planting) actually becomes part of the house itself, from an architectural point of view. The observer does not think of the one without the other. A foundation planting thus apparently broadens the base of the house, and gives it a more substantial and solidly set look.

Secondly, the foundation planting ties the house to the ground; it breaks the stiff and unbeautiful right-angle lines where the horizontal ground grade and the perpendicular wall lines of the house come together; and it further connects the house with the planting about the grounds.

And lastly, the foundation planting helps to hide the founda-

tion or the base of the house itself. Too often this is very ugly, although in modern architecture of the better type this objectionable feature is almost wholly overcome. Whether the foundation should be screened from view entirely, or allowed to show here and there through the planting, will depend upon the way the house is built. With a stone foundation, or with stucco going down to the ground line, it is almost always better to let the foundation show to the ground in places.

Any of the three objectives mentioned above would be sufficient to make a foundation planting desirable. Accomplishing, as it does, all three, it becomes indispensable.

All Evergreens—or Some Shrubs?

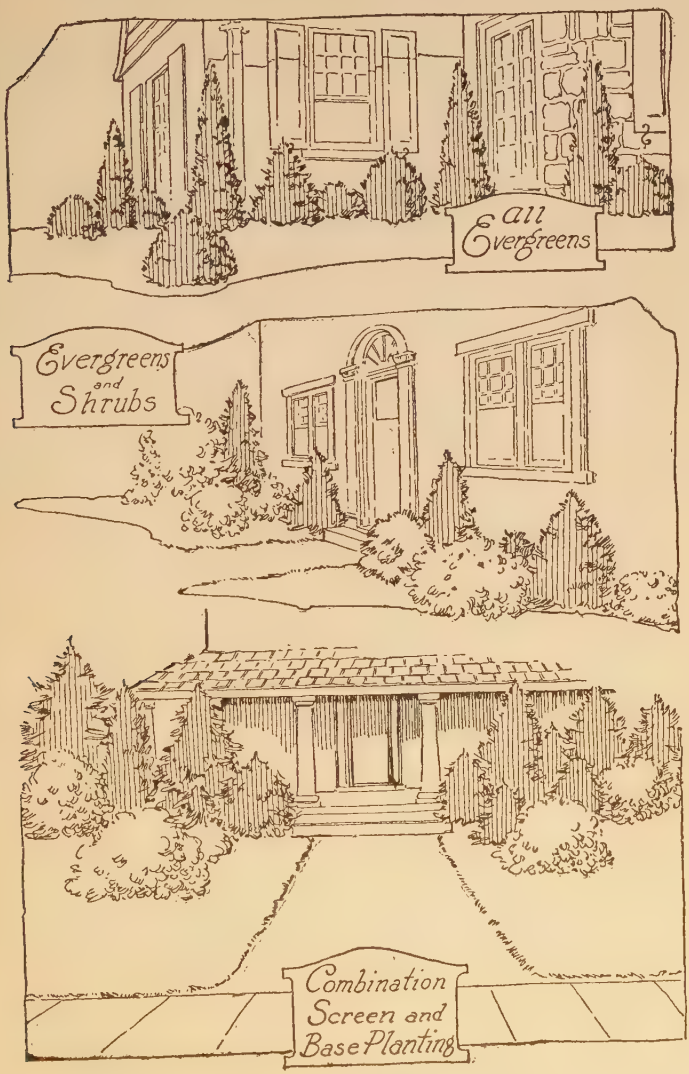
The first question to settle in planning the foundation planting, is whether it is to be composed entirely of evergreens, or to be made up of evergreens and shrubs in combination.

Both methods are advocated. Here, as in most things, it is not safe to make general rules. Which type of planting will give the most pleasing results depends upon the local conditions; upon the architecture and the setting of the house itself; and upon the rest of the landscaping. One should keep in mind that the foundation planting, while a separate unit, yet remains part of the landscaping of the place as a whole.

The argument for the all-evergreen foundation planting is that it possesses greater simplicity and unity, and remains beautiful throughout the year.

The argument for using shrubs is that they add variety, not only in color during the blossom season, but also in form and in texture, even when they are not in bloom. If some of the flowering broad-leaved evergreens, such as rhododendron and laurel, are used with the coniferous evergreens, this argument does not hold to the same extent. Even so, however, the period when color is available in the foundation planting is much more limited than where several varieties of flowering shrubs are used. One of the arguments against using shrubs is that they quickly grow tall and ungainly. With proper pruning, however, this is not true.

For the stucco, stone, or brick nouse, it is not desirable


All Evergreens
Evergreens and Shrubs
Combination Screen and Base Planting

entirely to hide the foundation, and in a formal or semi-formal setting, the base planting exclusively of evergreens often is to be preferred. The architectural lines of the house can be accented, and a pleasing simplicity of treatment maintained. In most cases, however, a few well-chosen flowering shrubs used with the evergreens will give the most pleasing results. Not only in their displays of cheerful color, but also in the graceful, fountainlike habit of growth of such things as forsythias, spireas, and others we get effects that are not possible with evergreens alone. The evergreens, moreover, make an ideal setting for the shrubs, displaying their beauty to its fullest advantage. This is true also of the berry-bearing shrubs, like barberry, snowberry, firethorn, and others.

Variety and Originality in the Foundation Planting

As in the architecture of the house itself and in the general scheme of the landscape planting, so in the foundation planting there are several quite distinct types which may be followed. A planting which would be entirely suitable and very beautiful for one house, may seem out of place or even ridiculous with another. The accompanying sketches illustrate, in less space than would be required for a written description, the differences between its several types of foundation planting.

With the increasing use of foundation planting there has naturally been a growing tendency toward standardization. In fact, many of the evergreen specialists offer complete sets of plants for "ready-made" foundation plantings. The advantage in this is obvious, as such collections can be offered to the customer at a considerable saving. The owner of the small home with a new planting to make, can almost always utilize one or more of these collections to advantage.

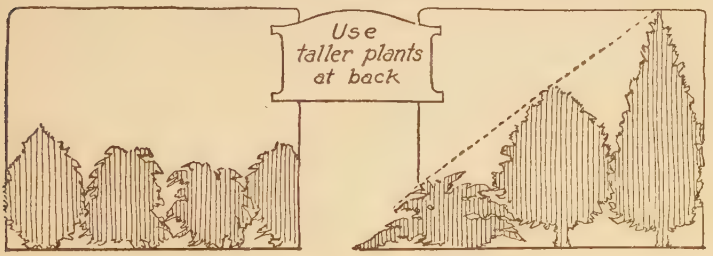
However, in the exterior decoration of the house, as in its interior, originality is desirable. If your grounds do not express your own personality, they may be beautiful, but they remain commonplace. Study carefully the foundation plantings that appeal to you; then try to make your own just as attractive, but not exactly the same.

Foundation Planting—Some Mistakes to Avoid

The most practical way to plan your own foundation planting is to try it first on paper. Make a rough sketch of the front of the house, with windows, door, steps, if there are any, indicated. Then sketch in, in outline, the size and shape of the

The outline or "silhouette" of your evergreen plantings is most important.

trees which you think would look well against it. (See page 17). The next step is to find, in this book and in your nursery catalogs, the varieties of evergreens which will give you the



Select varieties which give a slope or "face" to the planting.

sizes and shapes to fit your plan. This will not be difficult once you have made yourself somewhat familiar with the types of evergreens described in Chapters IV and V. *You can go this far in your planning without knowing the name of a single evergreen.*

Warning! The mistake most often made in foundation plantings is to use evergreens which will eventually grow to a large size, especially spruces and firs. These fit beautifully while they are small, and it is a great temptation to buy them because they sometimes seem to offer "the most for the money." It is to be regretted that some local nurseries which plant by contract set out such trees because they make a bigger immediate showing for less money. This practice is not fair either to the man for whom the work is done, nor to the more conscientious nurseryman who refuses to put in a planting which he knows will not give ultimate satisfaction. It may be said that in general only columnar, bushy, dwarf or creeping forms should be used. (Chapter XII contains a list of evergreens which should not be used.)

Silhouette Arrangement. The sketches of foundation plantings in this book show that the general outline of the planting against the house should be uneven or "up-and-down" in its combination of horizontal and vertical lines. A foundation planting made up entirely of one variety makes straight, even lines running around the house. It is monotonous and unattractive, as the accompanying sketch shows. If there is room for more than one row of plants in the foundation planting, they should be graduated in height—taller varieties at the back, medium growth next, and dwarf or spreading kinds farthest from the building. This arrangement not only makes the planting look richer and fuller, but also brings it down gradually to the ground or lawn line, so that there are no objectionable bare spots or empty spaces showing underneath. No more beautiful "finish" for groups of evergreens can be found than the various creeping varieties, such as Japanese Spurge, and the low-growing or procumbent juniper and yews. (See list on page 80, Chapter XII.)

CHAPTER IV

"DWARF" AND "TALL" EVERGREENS

DWARF evergreens are discussed in this book before tall evergreens because of their increasing importance in home landscaping.

The smaller-growing sorts can be planted where there is not room for those wonderful monarchs of the forest which we all admire, but which, unfortunately, are not adapted to a highly centralized civilization in which plots for home building are sold by the "front foot." To be envied, indeed, are those who have space enough to plant at will the larger-growing evergreens.

Although the terms "tall evergreens" and "dwarf evergreens" are universally used, the two groups have not been clearly defined. Since there are few true dwarf sorts, possibly the term "small evergreens" is more exact. On the other hand, however, all the species are small when they are young, and the term "dwarf evergreens" has come into such general use that it is probably best to retain it.

WHAT ARE DWARF EVERGREENS?

In this book we mean by "dwarf evergreens" to designate those which are actually dwarf or moderate in height under usual home planting conditions. By moderate in height, we mean up to five or six feet or so. In similar arbitrary fashion in the following chapter we shall class as "tall evergreens" those nominally attaining a height of from eight or ten feet, up to the giants of sixty to a hundred. Such a classification is arbitrary, but terms mean little without some sort of definition.

Types of Dwarf Evergreens

The dwarf evergreens do not belong to any one family or group. All of them have larger-growing cousins. The Pygmy Spruce, for instance, which attains a height of but two to three feet, is a close relative of the timber trees of the forest, as is the Montana or Mugho Pine of the other noble pines which every one knows. Some tall-growing varieties grow so very slowly under our conditions that they may be used as dwarfs. The Swiss Stone Pine (pinus cembra) is an example.

Classified by their outline shape or silhouette, which is usually the first thing the planter will consider, the dwarf evergreens fall into four general groups. These are:

1. True dwarf form (conical, or dwarf pyramidal) such as the Pygmy Spruce.
2. Globular or globe shaped, such as Globe Arborvitæ.
3. Spreading bush form, such as the Common Juniper.
4. Procumbent or creeping form, such as the Tamarix Sabin Juniper.

The accompanying illustrations of these several types show that here is a variety of material for the most interesting combination of grouping and arrangement.

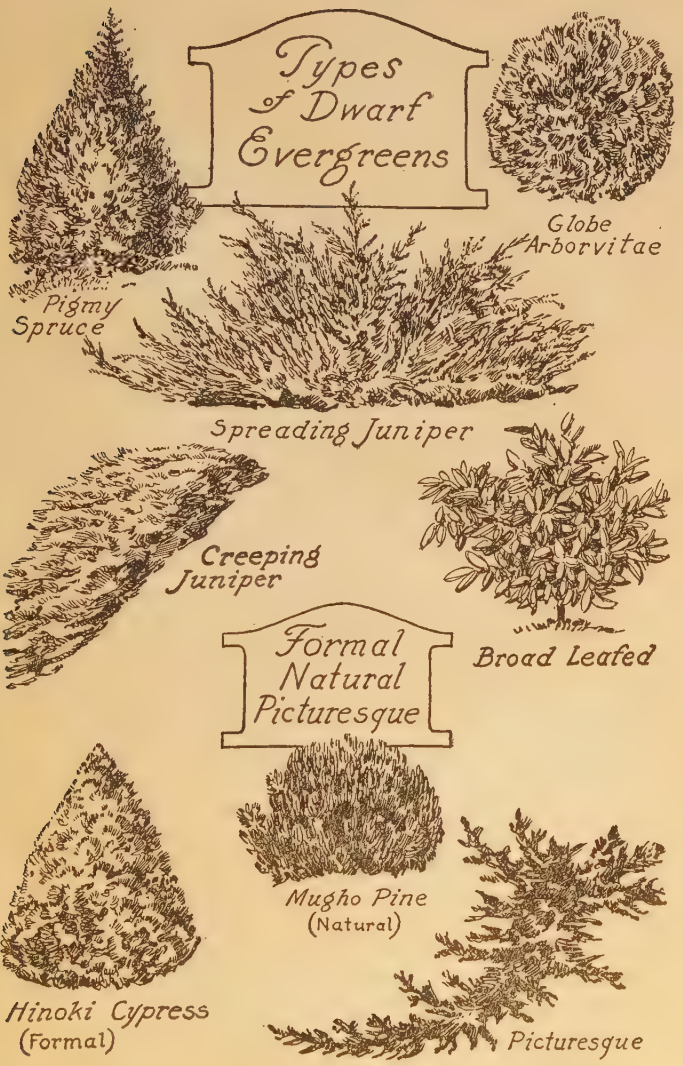
Some Other Characteristics of the Dwarf Evergreens

In addition to the differences in outline or shape, other characteristics of dwarf evergreens vary greatly in the different varieties.

Habit of Growth. Some of them, for instance, are distinctly regular and formal in shape; for example, the Hinoki Cypress and several of the Globe and the smaller pyramidal arborvitaes. Others are semi-formal or naturalistic, being neat but not too regular in growth; for example, the Mugho Pine or Sargent Weeping Hemlock. Still others are distinctly irregular—Japanese or almost grotesque in habit; such as the Fronded Juniper, Hick Yew and Squamata Juniper, and even to a greater extent some of the dwarf pines.

In the above planting the group around the entrance is good, but the general effect is too heavy, and the windows will soon be shut in.

The all-evergreen foundation planting is most desirable against stucco, stone or brick. In front of porch is a good example of a screen-foundation planting.


Types of Dwarf Evergreens
Globe Arborvitae
Pigmy Spruce
Spreading Juniper
Creeping Juniper
Broad Leafed
Formal
Natural
Picturesque
Mugho Pine
(Natural)
Hinoki Cypress
(Formal)
Picturesque

Color of Foliage. Here, again, there is a diversity which makes possible variety in color-tone effect which is surprising to those who have never given the matter any attention. The first time you visit an evergreen nursery you will be astonished at the wide range not only in the different tones of green, but of the various blue, silver, golden, and other shades. However, a word of warning here. The more striking the color, the more danger there is of using that plant where it will be conspicuous but not suitable. They must be used sparingly, and placed with the greatest care. (See page 80.)

Berries. A few of the low evergreens, particularly the yews and junipers, have berries which add much to their beauty, especially during the autumn and early winter. The bright red, fleshy cranberrylike berries of the former, and the bluish berry clusters of the latter, are extremely decorative.

Pruning to Control Size

Many of the larger dwarf evergreens, and the smaller tall evergreens, are either very slow growing, or may be given moderate pruning so as to keep them in bounds for situations where the fully matured trees, left to assume their natural size, might be too large. The various junipers, yews, and arborvitæs are among those which may be controlled to a considerable extent by judicious pruning, without attaining a formal or sheared effect. (For further information concerning pruning, see Chapter IX, page 68.)

Uses for Dwarf Evergreens

As will be evident from what has been said so far, the various types of dwarf evergreens are well adapted to many uses in the home landscape, particularly in the planting of the place of moderate size.

For foundation plantings and for evergreen groups all of the various types illustrated on page 23 may be utilized in various combinations.

For Hedges, many of the evergreens are ideal. I have already stressed this point (see page 10). It is to be hoped

that some of the varieties suitable for hedge planting will eventually be available in greater quantities and, therefore, at a lower price. They always must cost more, however, than the common shrubs, as they require much more time to produce and are more difficult to grow. As evergreen plants for hedges are usually kept closely sheared, the taller varieties may be used even for hedges of moderate height (see page 68). The dwarf varieties of compact form, such as Mugho Pine and Spreading and Dwarf Japanese Yew may be used.

For individual specimens, the smaller-growing evergreens are not so generally used as they might be. Almost any of them will stand out distinctly, and will remain in proportion, in the small-place picture. Formal, informal, or Japanesque varieties may be selected where they suit the general setting.

For the rock garden or the evergreen garden the genuine dwarf varieties are, of course, the best to use, particularly in the foreground of the picture. These varieties are mentioned in the list in Chapter XI (page 80).

TALL EVERGREENS

The tallest of the evergreens, of course, are included in the forest species—the "big trees" such as the spruces, firs, hemlocks, and pines of the Northern woods, the cypresses of Southern swamps, and the redwoods and other giants of the Western coast. But there are many others considered "tall" by comparison with those previously discussed. These include the taller-growing varieties of red cedars, junipers, yews, and others which, in time and under favorable conditions, will reach heights of fifteen to forty or fifty feet. Most of these tall evergreens, under cultivation, rarely attain a height anywhere near the stature they reach when growing under natural conditions.

Types of Tall Evergreens

As with the lower-growing evergreens, the various forms and other characteristics of the tall evergreens are not confined to individual species but show great variation. If one wishes

a tree of some particular form, color, or habit of growth, it may usually be found in several different species. This is one of the reasons why the selection and growing of evergreens is so fascinating.

Form. The first characteristic to be considered is, as with the lower-growing evergreens, the outline shape or silhouette. At least four are typical:

1. Broad pyramidal, or the "Christmas tree" form, such as the Colorado spruce.
2. Narrow pyramidal, such as the average redcedar.
3. Columnar or spirelike, such as the Irish yew or the column Chinese juniper.
4. Tree shape, with branches conspicuous, such as most of the pines.

The accompanying sketches give an idea of these several outlines and suggest the effect to be had both with single trees and in combinations or groups.

Habit of Growth. Species and varieties vary greatly, particularly as they grow older. Some tend to remain symmetrical and formal, as do many of the selected types and varieties of redcedars. Several, such as the upright-growing yews, are irregular or semiformal. Many of the pines tend to become decidedly irregular and picturesque as they grow older. The hemlocks, and certain varieties of other tall evergreens, have a drooping or fountain-like effect.

Foliage. While there is a decided range in the color tones of the tall evergreens—from such rich blues as the Colorado blue spruce and Koster blue spruce, through many shades of light and dark green to distinct silver and golden tones—the color variation is not quite so marked as among the dwarf evergreens. But the difference in foliage *texture* is, if anything, more marked. Among the plumy, feathery, and fernlike fronds of the various cypresses and arborvitaes, the great variety in size and texture of the needles of pines, spruces, and firs, and such unusual foliage as that of the Deodar cedar or the Japanese cryptomeria, one may select almost as fancy

dictates. Few amateur planters realize the effectiveness in foliage contrasts, which are quite as pleasing as those attained with different color tones, and much less difficult to use.

Berries, cones, flowers, and conspicuous new spring growth, in some cases quite as beautiful as flowers, may also be used to advantage to gain variety in planting the larger evergreens where one is so fortunate as to have space enough to use many.

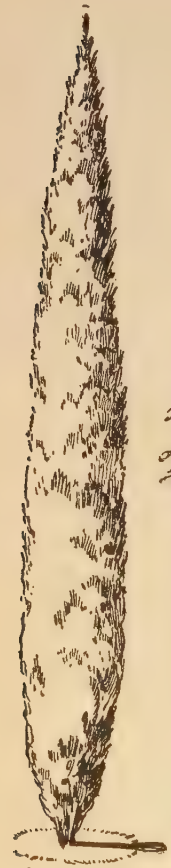
Various Uses for the Taller Evergreens

As specimen or single trees, almost all of the tall evergreens are effective. The largest of them are most imposing where there is ample space for their development. Often the mistake is made of planting them squarely in the middle of a lawn when they would both look better and occupy less room in a corner of the property, or at the side. A single spruce, fir, or pine—or, if the position happens to be shady, a hemlock—will be not merely a beautiful ornament from the day it is set out, but as the tree grows older, forming a house beneath its lower boughs where the children will love to play, it will lend a certain character to the place which no other plant can possibly give.

The evergreens of distinct character, either because of their naturalistic or Japanesque form of growth, or because of unusual foliage, are also most desirable as specimen trees when used on a suitable setting. (See list on page 80.)

In more or less formal planting, the narrow, upright forms such as tall, slender specimens of the common redcedar, or selected narrow varieties like pyramidalis, the column Chinese juniper, and Irish yew, give a touch not to be obtained with any other plants. In formal landscape gardening, they are indispensable. (See illustration, page 80.)

For tall screens and hedges, some of the taller-growing evergreens are among the most satisfactory of all material. The only thing which mitigates against their universal use, for this purpose, is the original cost. However, if their permanency, satisfaction, and the added value which they actually give to a place are considered, this original cost usually represents a



Columnar

Broad Pyramidal

Narrow Pyramidal

Tree Shape

Types of Tall Evergreens

Formal or Symmetrical.
Natural
Picturesque
Character in Tall Evergreens

better investment than the ordinary shrub hedge. It costs, year after year, just as much or more to maintain the latter in good condition, although the evergreen hedge is incomparably better looking, and more effective both as a hedge and as a windbreak.

For Backgrounds. For backgrounds for shrubs, for the flower garden, for small evergreens, or for the rock garden the taller-growing evergreens are most desirable.

In Groups. The smaller varieties of the tall-growing evergreens are suitable, but the larger sorts are not. They look all right for a few years, but soon "grow out of the picture," just as they do in the foundation planting. Upright-growing forms of junipers, redcedars, arborvitæ, cypresses, and yews may, however, be employed to good advantage.

Foundation Planting. The larger of the tall evergreens should seldom, if ever, be used in the foundation planting. (See page 20.) The medium-sized tall evergreens may be used, and often are desirable for the sake of variety. They should, however, be carefully placed. In foundation plantings of formal type, the very narrow columnar sorts may often be placed in such a way as to be exceedingly effective, and to harmonize with the vertical architectural lines of the building. They are especially effective against light stone and stucco walls. Varieties suitable for this purpose are listed on page 79.

CHAPTER V

THE SMALLER EVERGREENS:

Junipers, Arborvitæs, Cypresses, Cedars, and Yews

Probably no other group of plants is so confusing to the beginner, trying to select varieties for his first planting, as the ornamental evergreens.

This is due, in part, to the astonishing variation in the plants themselves. Confusion is added by the unfamiliar scientific names which are used for evergreens more generally than for most other plants. But what above all else has made "confusion worse confounded" has been the chaotic use of common or English names. Until the adoption of Standardized Plant Names by the American Association of Nurserymen in 1923, it was almost impossible to find any three catalogs in which the amateur could identify a reasonably large proportion of the evergreens described. This was not to be wondered at, as the botanists themselves had no standard system of nomenclature, and differed greatly in their opinions as to the species and subspecies in which many of the plants belonged. Even yet, despite the great improvement made, the subject is more than sufficiently bewildering to the beginner.

Names. In the following pages, standardized plant names, so far as they are available, have been used for both the common and scientific names. Synonymous names, which are still in use to a regrettable extent, are placed in brackets, thus: Prostrate [Spreading] Juniper (J. communis depressa [canadensis]). The catalogs list this plant under as many as six different names: Prostrate Juniper, Spreading Juniper, J. communis

depressa, J. communis canadensis, J. c. prostrata, and J. c. prostrata nana; this is but one example among scores. The Index of this book includes all the names commonly used, so that any plant may be located and identified.

Varieties. Many more varieties are mentioned than any home owner, even with a large place, would use. A shorter list, however, would have meant arbitrary selection of some varieties and the omission of many others equally desirable. As it is, many fine varieties are found in the catalogs which are not mentioned here. Varieties of evergreens are more or less permanent; they do not change from season to sason, as do, for instance, gladiolus or dahlias. All of those included in the following pages are available; most of them may be found in the catalogs of a half-dozen evergreen specialists. In this connection, one may use more varieties of evergreens than of most other plants without creating inharmonious results, if the highly colored sorts are not used too freely.

Descriptions are necessarily brief. They will serve for ready comparison. More detailed information is available in the many excellent catalogs which one may secure for the asking, or from the proprietor of any local nursery.

Leading varieties, in the classes where there are many to choose from, are set in caps. This does not mean that they are necessarily better than others, but merely that over a long period of use they have given such satisfaction that the demand for them is great. Many of the fine new sorts have, of course, not yet found their way into general use. (NOTE: *The preceding remarks apply also to Chapter VII.*)

JUNIPERS, ARBORVITÆS, CYPRESSES, CEDARS, AND YEWS

These trees, with few exceptions, do not grow nearly so large as those described in the following chapter. Even the taller sorts rarely reach thirty to forty feet. Also, the character of their growth is such that they may readily be trimmed or sheared and—within reasonable limits, according to their habit of growth—kept to any desired size. They are much better suited to limited areas than the really big evergreens.

Junipers

All things considered, the junipers are probably the most valuable group or class of ornamental evergreens. They are hardy, easily grown, free from insect enemies, not particular as to soil, and cover, with their cultivated types, such a wide variety of size, form, and color that one could easily make a very satisfactory evergreen planting, even on a large scale, with junipers alone. Many have conspicuous berries which add greatly to their ornamental value.

Redcedars

Here is a typical example of the confusion among evergreen names. The Redcedar, formerly written Red Cedar, is not a cedar at all, but the tall-growing type of our native juniper, which may be found through most of the United States from Canada as far south as Florida. It is very variable in form; one may find in the same field dozens of distinct types. Often, the foliage is an objectionable brown through the winter months. The cultivated, nursery-grown varieties are more uniform and satisfactory.

REDCEDAR (*Juniperus virginiana*): The type described above.

Silver R. (*J. v. glauca*): A loose pyramidal form with soft, silvery blue foliage; ordinarily fifteen to twenty feet high; one of the very best for general use.

Goldtip R. (*J. v. elegantissima*): A loose, bushy, pyramidal form with branched tips distinctly .golden during summer, and bronzy in winter.

PYRAMIDAL R. [Hill P.] (*J. v. pyramidalis hilli*): A most excellent sort forming a close, very narrow pyramidal or columnar shape; a deep green color and especially good for formal use.

Cannart R. (*J. v. cannarti*): Low, compact form with tufted foliage of irregular growth, and of a very deep, dark grass green color; informal; distinctive.

Low-growing Redcedars

GLOBE REDCEDAR (*J. v. globosa*): A very compact, globe-shaped growth.

KOSTER R. (*J. v. kosteri*): Spreading bush form, usually reaching three to five feet; shaped much like the Pfitzer juniper; one of the finest of all for small gardens.

Colorado Junipers (*J. scopulorum*)

This variety is placed here because, while it is classed as a juniper, it might logically have been called the Western redcedar, as it is very similar in habit of growth and in other respects to the Eastern redcedar. This excellent juniper, while utilized abroad, was neglected in this country until the introduction of three varieties developed by Hill.

Argenitia [Hill's Silver]: A very narrow, dense pyramidal form usually with a single stem or leader; in a group it shows up as one of the lightest colored of all evergreens; though some specimens tend to blue; the berries are very ornamental.

Chinese Junipers

Some of the Chinese junipers are incorrectly listed as "Whitecedars." Like the Redcedar above, they are not cedars at all.

CHINESE JUNIPER [Whitecedar] (*J. chinensis*): Like its cousin plant the redcedar, the Chinese juniper succeeds over a remarkable range of climate, and in all soils excepting those that are wet or poorly drained. It does not grow so tall, seldom over fifteen to twenty feet; and it ordinarily forms a more broad and bushy pyramid. The variation in growth is even greater than among the redcedars, as there are masculine and feminine forms of the plant, and the type of foliage often changes as the trees mature.

Conical Ch. J. (*J. ch. neaboriensis*): This is a very dense-growing conical or pointed form, of much more formal effect.

Golden Ch. J. (*J. ch. aurea*): Of upright habit with the new growth a beautiful golden color.

COLUMN CH. J. (*J. ch. pyramidalis* [*columnaris*]): One of the most remarkable of the newer evergreens; forms a dense, narrow, straight column, similar to the Irish juniper but growing taller, especially in the Northern states; color, a beautiful bluish gray; the finest vertical evergreen for Northern sections.

Dwarf and Low-growing Forms

PFITZER JUNIPER (*J. ch. pfitzeriana*): Deservedly one of the most popular of all evergreens; spreading, bushy, graceful, informal habit, eventually six to eight feet, but can easily be kept lower; beautiful grayish-green foliage; drooping.

GLOBE CH. J. (*J. ch. globosa*) [*virginalis*]): Formal habit; short, thick growth; light green foliage.

Golden Globe J. (*J. ch. globosa aurea*): Golden foliage form.

Other Junipers

This group includes several other junipers, usually given the

common name "juniper," but occasionally placed in other classes because of the confusion resulting from their close relation to the cypresses. Among these are to be found the hardiest and most generally useful of the spreading, prostrate, and trailing evergreens.

JAPANESE JUNIPER [Trailing Ch. J.] [*J. japonica*] (*J. ch. procumbens*) (Chinensis japonica): Low spreading, sometimes procumbent drooping branches; light green; extremely hardy.

Ground [Common] J. (*J. communis*): Spreading, open bush; branches growing outward from common center to height of four feet or so; very hardy.

Prostrate [Spreading] J. (*J. communis depressa* [*canadensis*] [prostrata]): Spreading branches with ascending stems, usually not over three feet or so; makes large patches; ground cover.

Upright Forms

IRISH JUNIPER (*J. communis hibernica*): Tips upright, forming dense columnar growth; foliage deep bluish green.

Dwarf Irish J. (*J. communis hibernica nana*): Dense, compact globular to pyramidal form of extremely slow growth.

SWEDISH J. (*J. communis suecica*): Very narrow columnar form reaching twenty feet or more in height; lighter and bluer in color than Irish J., with tips of branches drooping.

Spiny Greek J. (*J. excelsa stricta*): Tall, densely columnar shape with sharp points; very slow growing.

Procumbent or Creeping Junipers

CREEPING JUNIPER [Coast of Maine J.] (*J. horizontalis* [*prostata*] [*sabina h.*]): Long trailing branches, with upright stems sometimes to three feet; bluish green foliage slightly aromatic; blue berries; extremely hardy and valuable for exposed positions; one of the very best creepers, forming a dense mat, usually less than a foot high, spreading to ten feet or more; color soft blue, deepening toward autumn; distinct, very valuable.

Waukegan J. [Hill W.] (*J. h. douglasi*).

SQUAMATA J. (*J. squamata*): Spreading shrub, branch tips sometimes ascending; bluish or grayish green; not reliably hardy north of New York unless covered with snow.

Meyer J. (*J. squamata meyeri*): Upright shrub, blue green.

SAVIN J. (*J. sabina*): Extremely hardy, even to Canada; procumbent stems, dark green foliage with a pungent odor.

TAMARIX SAVIN [Gray-carpet J.] (*J. sabina tamariscifolia*): Very low and spreading; fine for rock work.

Arborvitæs

With the junipers, the arborvitæs probably form the most

important class of ornamental evergreens. The foliage is feathery, frond, or fernlike; usually aromatic; the typical shape being a broad, symmetrical pyramid. This class is ideal for shearing and covers a wide variety of size and coloring. Here, again, there has been much confusion in classification.

The two main types of the arborvitæs are the American [Occidental] and the Chinese [Oriental]. They may readily be distinguished by the foliage, which generally grows horizontally in the American varieties and perpendicularly in the Chinese varieties. The American arborvitæs are entirely hardy, and as a class more satisfactory; the Chinese sorts, especially the cultivated varieties, being unsafe in very northern locations. Among the latter, however, are some of the finest-colored foliage evergreens, and they are satisfactory, where given some shelter, as far north as New York.

American Arborvitæs

Satisfactory over a wide area, from Canada south to Tennessee; extremely valuable for dense hedges and protective windbreaks. There are half a hundred or more forms in cultivation, including the following:

AMERICAN ARBORVITÆ (*Thuja occidentalis*): Symmetrical pyramidal tree, fifteen to forty feet; fairly dense growth; medium green foliage, but turning brown in winter.

American Pyramidal A. (*T. oc. pyramidalis* [*fastigiata*]): Columnar form with short branches and dark green foliage; excellent for formal effect.

American Green A. (*T. oc. viridis*): Compact, pyramidal habit; very dark green, lustrous foliage.

WARE A. [Siberian A.] (*T. oc. wareana* [*robusta*]): Dark, conical shape; more dense, with foliage more crested than above.

Vervæne A. (*T. oc. vervæneana*): Pyramidal with slender branches and very graceful effect; foliage with yellow tinge.

GEORGE PEABODY A. [Peabody Golden] (*T. oc. lutea*): Pyramidal shape and bright golden foliage.

B. and A. Lutea A. (*T. oc. lutea B. and A.*): Dense, branching, pyramidal, clean, yellow green foliage, holds through the winter; new variety, improvement over above.

Columbia A. (*T. oc. columbia*): Very strong-growing sort with heavy foliage with beautiful silvery variegation.

American Weeping Arborvitæ (*T. oc. pendula*): Tufted foliage, very effective drooping branches.

THREADLEAF A. (*T. oc. filiformis*): Very slender, graceful branches, waving or nodding at tips.

Dwarf and Low-growing Forms

AMERICAN GLOBE ARBORVITÆ [Globe A.] (*T. oc. globosa*): Round, compact shape, dense foliage, gray-green; good for formal accent.

WARE GLOBE A. (*T. oc. wareana globosa*): Globe-shaped form of Ware arborvitæ—described above.

Little Globe A. (*T. oc. nana*): Very compact globe-shaped sort.

LITTLE GEM A. (*T. oc. little gem*): Dwarf, squat form, wider than it is tall; under two feet when full grown.

TOM THUMB A. (*T. oc. ellwangeriana*): Low, dense, slightly pyramidal shape as plants mature.

Hovey A. (*T. oc. hoveyi*): Very dense, egg-shaped; branches in layers.

Oriental Arborvitæs

ORIENTAL [Chinese] ARBORVITÆ (*Thuja orientalis*): Foliage has peculiar vertical effect as though folded or crushed; bright olive green color retained through the winter; hardy fairly dense neat pyramidal habit; hardy to Boston, but more tender than American sorts; cultivated varieties below mostly less hardy.

Oriental Pyramidal A. (*T. or. pyramidalis*): Spirelike with vivid green foliage; good for both North and South.

ROLLINSON GOLDEN [Yellow Column] A. (*T. or. elegantissima*): Tall column, quite formal effect, golden changing to bronze in winter; perhaps best of yellow sorts.

Silver A. (*T or. argentea*): With somewhat silvery foliage.

Rosedale Hybrid A. (*T. or. hybrid*): Pyramidal shape with feathery steel-blue foliage; purplish cast in winter; particularly resistant to heat and good for the far South.

Weeping Oriental A. (*T. or. pendula*): Gracefully pendulous branches with threadlike foliage.

Dwarf Forms

Golden Arborvitæ (*T. or. aurea*): Low, compact shrubby growth, new growth golden yellow but changing to green.

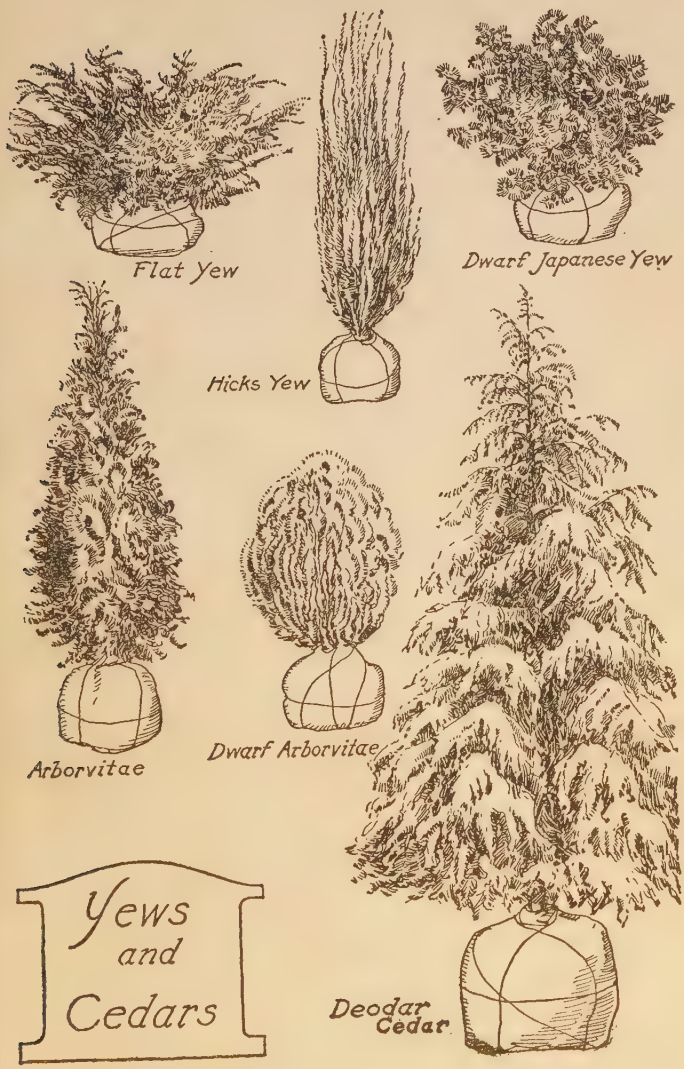
BERCKMAN GOLDEN A. (*T. or. aurea nana*): Dwarf, very compact rounded cone; yellowish to bright golden green; deep and formal; especially good for plants in tubs or boxes.

Siebold A. (*T. or. sieboldi* [*compacta*]): Compact, globose form, bright green; good in contrast with above.

False Arborvitæs

False-arborvitæ [Japanese A.] [Sitka cypress] (*Thujopsis borealis*) [*latifolia glauca*]: Slender, erect, and vigorous grower with beautiful, bright bluish green foliage; not quite so hardy as the real arborvitæ.

Junipers
and
Cypress
Savin
Juniper
Irish
Juniper
Pfitzer Juniper
Plume Cypress
Lawson
Cypress
Italian
Cypress


Flat Yew
Hicks Yew
Dwarf Japanese Yew
Arborvitae
Dwarf Arborvitae
Yews and Cedars
Deodar Cedar

STANDISH ARBORVITÆ (*Thujopsis standishi*): Long branchlets with large fleshy leaves with a pendulous effect, which combine to make it a rare ornamental treasure; light green foliage.

Cypresses

(*Chamæcyparis; retinospora; cupressus*)

This group includes a number of evergreens, which in size average considerably larger than those in the preceding group, but which are not so large as the firs and spruces. They are natives of warmer climates; and while some of them may be grown as far north as Canada, they are, in general, not nearly so hardy as the native junipers and arborvitæs. However, because of their graceful habit of growth and out-of-the-ordinary character, they are well worth making some special effort to possess. A single specimen in its unusual beauty will be the source of lifelong pride and pleasure. Although somewhat tropical in general appearance, they are not enough so to look *outré* when associated with the more northern evergreens. In warmer climates, they are, naturally, among the favorite ornamentals. They prefer rather moist soil, and some protection from sweeping, dry winds.

Retinospora. There is no such genus of plants as retinospora. This name has been used erroneously for juvenile or immature forms of chamæcyparis and thuja; it is still sometimes used, so we have included it below as a synonym.

Hinoki Cypress

Hinoki [Japanese] Cypress (*Chamæcyparis* [*Retinospora*] *obtusa*): A handsome Japanese tree with horizontal, somewhat pendulous branches; hardy to New England.

Dwarf Forms

DWARF HINOKI CYPRESS (*Ch. o. nana*): Deep green foliage and of very slow growth; dense, compact.

Football C. (*Ch. obtusa compacta*): New dwarf variety of unusually dark green foliage.

Pygmy H. C. (*Ch. o. pygmæa*): The most dwarf, creeping horizontal branches; very dense foliage; picturesque; especially good for rock gardens.

Weeping H. C. (*Ch. o. pendula*): Extremely graceful, pendulous form.

Sawara Cypresses

Sawara [Pea-fruited] Cypress [*Retinospora*] (*Chamæcyparis pisifera*): Tall, loosely branched pyramidal shape; broad, flat, glossy green foliage; stands clipping well; formal.

Thread C. ([*Retinospora*] *Ch. p. filifera*): Long, pendulous branches, extremely graceful.

PLUME C. ([*Retinospora*] *Ch. p. plumosa*): Conical habit with upright branches; foliage bright, soft and feathery, but not so much as Moss variety below.

Golden S. C. (*Ch. p. aurea*): Golden yellow form of the type.

MOSS S. C. ([*Retinospora*] *Ch. p. squarrosa*): One of the smallest bush forms but very graceful; the fine feathery foliage being of a soft blue tone above and silvery below; a splendid small evergreen.

Lawson Cypresses

LAWSON CYPRESS (*Chamæcyparis* [*cupressus*] *lawsoniana*): A tree from the Pacific Northwest which has been a great favorite in Europe, there being some seventy-five cultivated garden forms. Here it is hardy as far north as New York or even to Massachusetts in a sheltered location; one of the most beautiful of all evergreen trees; outstanding in the largest collection; the foliage, in broad drooping fronds like tropical ferns, starts at the ground and rises in a broad, symmetrical pyramid; one of the most impressive of all specimen evergreens.

Green Column C. (*erecta viridis*): Dense color bright green; columnar form.

Blue Column C. (*Ch. erecta glauca*): Similar but with blue foliage.

Weeping L. C. (*Ch. l. pendula*): Descendant pendulous branches.

Dwarf L. (*Ch. l. nana*): Dwarf, dense, globose habit; unusual small evergreen.

True Cypresses

Italian Cypress (*Cupressus sempervirens*): Tall, narrow column with deep green foliage; most striking, but hardy only in Southern states and California.

Cripps C. (*C. s. macrocarpa crippsi*): Tips of branches silvery white; excellent plant.

NOOTKA C. (*C. s. nootkatensis*): The "yellow" cedar of the Pacific Northwest; one of the finest for the East; hardy to New England; narrow, pyramidal form.

CEDARS

These are the true cedars; they are moderately hardy, and as a class are of the most ornamental of tall evergreens.

Atlas [Mount A.] Cedar (*Cedrus atlantica*): Tall, graceful pyramid with pale bluish green foliage; hardy to New York City.

BLUE A. C. (*C. a glauca*): Silvery blue and hardier.

DEODAR CEDAR (*Cedrus deodara*): Most impressive; unusual; broadly pyramidal in shape rising to slim, spirelike top; pendulous branches; the type is hardy only to New Jersey and to southern Pennsylvania.

LEBANON CEDAR [Cedar of Lebanon] (*Cedrus labani*): Particularly impressive; wide-spreading pyramid, very picturesque; hardy to southern New York, but prefers warm, rich, well-drained soil; there is a more hardy form introduced by the Arnold Arboretum which has been successful at Boston and Rochester.

Japanese Cedars (*Cryptomeria*)

JAPANESE CEDAR [Common Cryptomeria] [Japanese Temple Cedar] (*Cryptomeria japonica*): One of the most picturesque or Japanesque of all; slender trunk with branches in irregular whorls; hardy to New York; farther north in sheltered locations.

Lobb J. C. (*C. j. lobbi*): Slender trunk, irregular branches; very Japanese effect; more compact growing; very dark green.

YEWS

The yews are valuable for their very deep green, sometimes almost black, and dense foliage, giving an unusually rich effect. The scarlet fruits or berries, sometimes as large as small cranberries, in contrast to the dark foliage, give them an effect unique among all the evergreens. The yews have characteristic reddish brown bark, and very irregular habit of growth. They are very long lived and become more beautiful with age.

Canada Yew

Canada Yew (*Taxus canadensis*): The hardiest of all, but one of the least ornamental; the foliage turning rusty reddish shade in winter.

Japanese Yews

JAPANESE YEW (*Taxus cuspidita*): Low tree with spreading upright branches; perfectly hardy to Massachusetts, and preferable to the Canada Yew, as it retains its dark green color through the year.

Upright Jap. Y. (*T. c. capitata*): Possibly more upright in growth but very similar to above.

Upright Jap. Y. [Andorras] (*T. c. fastigata*): Is a real upright form, somewhat broader than the Irish Yew, but hardier; a valuable new evergreen.

DWARF JAP. Y. (*T. c. nana* [*brevifolia*]): Is hardy to Canada; bushy form; very desirable.

Chinese Y. (*T. c. chinensis*): Tree-shaped form with horizontal branches and light green foliage; distinct but not as hardy as the Japanese.

English Yews

ENGLISH YEW (*Taxus baccata*): Treelike habit, usually with short trunk; hardy to New York City.

SPREADING ENGLISH Y. (*T. b. repandens*): Low-growing, wide-spreading branches; the hardiest of the prostrate yews.

Prostrate English Y. (*T. b. procumbens*): Hardy as far north as New England; long, spreading branches.

Irish Yew (*T. b.* [*hibernica*] *fastigiata*): Narrow, columnar, upright form with dense, dark, glossy foliage; very effective as formal accent plant.

Ramshorn Y. (*T. b. gracilis pendula*): A symmetrical plant with horizontal-spreading branches; gracefully pendulous tips; the "most decorative of all the yews."

HICKS Y. (*T. media hicksi*): Cuspidata x baccata cross, similar to Irish yew, but much hardier; most valuable new variety.

CHAPTER VI

THE LARGER EVERGREENS

Firs, Spruces, Hemlocks, Pines, and Deciduous Evergreens

The larger evergreens are the noblest forms of plant life. At maturity they are entirely different in effect from most of those we have discussed so far. They need ample space to develop as they should; in limited quarters they appear incongruous and out of place, hence they are not so well adapted to the restrictions of the small suburban place as are the smaller-growing species. The slow-growing and low-growing forms, however, are becoming more generally available, and offer a choice group for out-of-the-ordinary results in landscaping the small place. (See note, page 32.)

The Firs

Firs as a group take less kindly to being domesticated than spruces or pines. Dry winds, smoke, and dust do not agree with them. They are found mostly in cool, moist climates, and prefer the same conditions under cultivation. They give us, however, some of the most pleasing color values. Firs may be distinguished from spruces by the bark, which is usually quite smooth, and by their upright cones.

WHITE FIR (*Abies concolor*): This is a very rapid grower, often making as much as eighteen inches a year; it is one of the very best for unfavorable conditions; stands clipping well, making an excellent hedge; seedlings show a considerable variation in color, some being of a distinct bluish green.

NORDMANN F. (*A. nordmanniana*): Often called Nordmann's Silver Fir; a dark, glossy green, silvery beneath; excellent for the mid West and does fairly well in the Northeast, in sheltered locations.

Nikko F. (*A. homolepis*): A Japanese fir forming a broad-based pyramid; deep green foliage with purplish cones; one of the best for the Northeast.

VEITCH F. (*A. veitchi*): Perhaps the most rapid growing of all; extra hardy; somewhat like white fir; silvery foliage with bluish tint beneath; it is especially handsome while young.

Algerian F. (*A. numidica*): A splendid form; broadly pyramidal but much more graceful than most of the others; new growth makes a pleasing contrast to older foliage; hardy to New York; a good fir to try.

Dwarf Forms

There are practically no dwarf firs generally available. There are, however, plenty of dwarf spruces and a dwarf form of the Douglas-Fir (see below).

DWARF BALSAM [HUDSON] FIR (*A. balsamea hudsonia*): A dwarf form of the balsam fir which does much better under cultivation than the type.

Dwarf Silver F. (*A. pectinata alba*).

Weeping Silver F. (*A pectinata pendula*): A very handsome tree; extremely beautiful as a specimen.

Douglas-Firs

This is listed here for practical purposes, although strictly it is not a real fir (abies), but a separate species.

DOUGLAS-FIR (*Pseudotsuga douglasi*): One of the finest of all evergreens; a rapid grower, with deep bluish or slightly yellowish green foliage; the branches set in regular whorls, which give distinct horizontal lines; with age these sweep down in a characteristic curve; like the firs, prefers moist soil, but does better than most of them under unfavorable conditions.

Weeping D.-F. (*Ps. d. pendula*): Drooping branches clothed in very dark green foliage; exceptionally handsome.

Dwarf Forms

Globe D.-F. (*Ps. d. globosa*): Low growing and bushy; a vigorous, effective, small evergreen.

THE SPRUCES

Somewhat similar to the firs in general appearance, but more graceful in habit of growth. Like the firs, they prefer fairly moist soil, but do better where it is light or somewhat sandy; ranking in this respect between the firs and the pines. The bark is usually scaly, somewhat rough, the leaves four-angled,

and the cones pointing downward; in many sections they do better than the firs.

WHITE SPRUCE (*Picea canadensis* [*glauca*] [*alba*]): A very useful evergreen; shiny bluish green foliage, Christmas tree shaped, with branches upright; rapid growing and extremely hardy, withstanding quite successfully wind and salt air, but prefers cool, moist soil.

BLUE COLORADO S. (P. *pungens glauca*): Similar but with bluish foliage, doing better under cultivation than the above.

KOSTER BLUE S. (*P. p. glauca kosteri*): Probably the most widely known of all ornamental evergreens; compact growth and a wonderful soft blue in color; a beautiful tree for a single specimen, but to be used with restraint.

Norway S. (*P. p. excelsa* [*abies*]): Widely planted but, like the white spruce, not one of the best for sandy or light soils or a dry climate; under these conditions likely to be attacked by red spider; very useful, when kept trimmed, for hedges, screen, or windbreaks.

ENGELMANN S. (*P. engelmanni*): Symmetrical, pyramidal form retained to maturity; grows well over a wide range; decidedly one of the finest of all firs for cultivation.

Alberta [Black Hills] S. (*P. c. albertiana*): Compact; a form of canadensis; compact and bushy habit; light green foliage, medium height; slow growing; excellent for mid Western sections.

Tigertail S. (*P. polita*): Very distinct with peculiar spiky foliage; good green color; retains its habit well as it develops, but should have rich soil and a somewhat protected situation.

Oriental S. (*P. orientalis*): One of the most graceful in habit and very slow growing, making it especially desirable for small gardens.

Serbian S. (*P. omorika*): Narrow, pyramidal habit; one of the finest of all for northern latitudes.

Koyamai S. (*P. koyamai*): Narrow pyramidal habit; hardy to Massachusetts; a Japanese variety which promises to be one of the very finest of the newer evergreens.

Weeping Norway S. (*P. excelsa pendula*): Very irregular habit; Japanese effect; excellent for rock gardens, or picturesque plantings.

Weeping Koster S. (*P. p. g. k. pendula*): One of the most distinctive of all ornamental evergreens; not merely pendulous, but "falling down" in habit, some specimens requiring the support of a pipe post.

Dwarf and Low-growing Forms

The dwarf spruces offer a wide variety, though space permits mentioning but a few here. They are not used nearly so generally as they might well be, largely because they have not been generally offered, but they are becoming more available.

DWARF ALBERTA S. (*P. canadensis albertiana conica*): True dwarf tree form; three to four feet; a gem of a little tree, and a great acquisition for the rock garden or the small grounds.

Arrowhead Norway S. (*P. excelsa conica*): Dense cone-shaped form, light green color, semi-dwarf, attaining a height of ten to twelve feet.

Maxwell S. (*P. excelsa maxwelli*): Low, dense growing and very dwarf; seldom over two to three feet.

GREGORY S. (*P. excelsa gregoryana*): Compact growth; very dwarf, seldom over two to three feet; irregular, picturesque foliage; one of the best for rock gardens.

Barry S. (*P. excelsa clanbrasiliana*): Similar to the preceding, but of even more Japanesque appearance; irregular spreading branches, with pendulous branchlets.

HEMLOCKS

The hemlocks are infinitely more graceful in general character of growth than either the firs or the spruces. They are moisture-loving trees, but while a moist soil is usually recommended for them, they will grow well in ordinary soil not excessively dry. The fact that the rate of growth will then be slower is as often an advantage as a disadvantage. They are very adaptable to shearing or to pruning, but of course this detracts from their graceful natural form.

CANADA HEMLOCK (*Tsuga canadensis*): Native to Canada and the northern states. One of the few coniferous evergreens which will thrive in shade; give as moist a situation as possible, but can be grown almost anywhere by giving plenty of peat moss or evergreen leaf mold in the soil, and by watering during dry weather; one of the finest of all evergreens for screens or hedges, and of rapid growth; a splendid tree, which will more than repay any efforts necessary to get it started.

CAROLINA H. (*T. caroliniana*): Has been called the most beautiful of all American evergreens; somewhat smaller and more compact in growth than the preceding; the cones are particularly ornamental; likes a cool, moist soil.

Chinese H. (*T. chinensis*): A very handsome tree, growing well but not quite so hardy as the Japanese.

Slender Chinese H. (*T. ch. gracilis*): Exceptionally graceful with slender, drooping branches; a rarely beautiful plant.

Dwarf and Low-growing Forms

Dwarf Canada H. (*T. canadensis compacta*): Low, bushy growth and very satisfactory dwarf evergreen, particularly for shady locations.

Sargent Weeping H. (*T. c. pendula*): One of the most distinct and beautiful of all small evergreens; forms a flattish, almost table-like top, with "weeping" branches.

PINES

The pines constitute the largest group of coniferous evergreens. They are especially valuable in cold climates; many of the species thrive in soil too light and sandy, or too dry, to suit firs, spruces, or hemlocks. While of fairly symmetrical growth in the younger stages, they become picturesque as they mature. In this respect, they have a decided advantage over most of the firs and spruces. Some one has said of the pines that they are the only native evergreens which "grow old gracefully."

WHITE PINE (*Pinus strobus*): The best known of all the pines, being native throughout the northeastern United States; often on very light, dry, sandy soil; extremely rapid grower; beautiful as an individual tree, and also excellent for screens or windbreaks, withstanding exposure particularly well. The spreading limbs give a horizontal effect, contrary to that of most of the other large evergreens.

SCOTCH P. (*P. sylvestris*): The best pine to use in place of the white pine where the latter is subject to injury. Somewhat more spreading and irregular in growth; branches frequently drooping; extremely hardy; a rapid grower and succeeds in many soils; excellent for screens or hedges; characteristic yellowish bark.

Western White P. (*P. monticola*): Quite similar to the white pine in appearance, but of more dense growth, and of somewhat narrower form; very slow growing and good for small areas; hardy to Massachusetts.

Western Yellow [Bull] P. (*P. ponderosa*): Spreading branches and extra large, handsome foliage; impressive and dignified appearance; very desirable but needs more moist soil than most pines; drooping form (*pendula*) more distinct in appearance.

AUSTRIAN P. (*P. nigra*): Symmetrical, pyramidal form with dark green foliage; very satisfactory; native to Newfoundland; extremely hardy, and a very rapid grower; good for windbreak.

RED [NORWAY] P. (*P. resinosa*): A two-leaved pine, native to Newfoundland; one of the most ornamental; extremely hardy and adaptable; suitable for clay soil; handsome foliage; excellent for bold effects.

Limber P. (*P. flexilis*): Low spreading, thick growth; excellent for rocky slopes; fairly moist soil; a slow grower.

Jeffrey P. (*P. jeffreyi*): Narrow pyramidal form; dense; long, blue green foliage; another fine Western pine which should be seen oftener; conspicuous blooms; very hardy.

Japanese Red P. (*P. densiflora*): A very rapid grower, forming a handsome, well-rounded tree; assumes a decidedly Japanese effect as it matures.

Jap. White P. (*P. parviflora*): Medium-sized tree, twenty to twenty-five feet; dense habit, with tufted, crowded growth; not particular as to soil; develops slowly; good for rock gardens and informal planting.

Jap. Black P. (*P. thunbergi*): Thin, spreading habit; very picturesque; fifteen to twenty feet; hardy to Massachusetts.

Himalayan [Bhotan] P. (*P. excelsa*): Horizontal, drooping branches and very long leaves; six to eight inches; exceptionally beautiful; grows well, occasionally injured by sapsuckers (birds).

Dwarf and Semi-dwarf Forms

These are especially valuable because they will thrive in light, sandy soils and in exposed positions. Many a landscape planting could be given more variety by the addition of one or more of these dwarf pines.

Dwarf White P. (*P. strobus nana*): Low, round, bushy tree; slow growing; two to four feet.

Dwarf Scotch P. (*P. sylvestris pumila*): A small form of the type, especially good for rock gardens.

Swiss Mountain P. (*P. montana*): Small tree, fifteen to twenty feet; picturesque habit; hardy to Canada.

MUGHO P. (*P. montana mughus*): Most useful of all dwarf pines; variable habit; some specimens very symmetrical; good for formal planting and foundation; more irregular specimens better for rock gardens and similar work; extremely hardy and in every way satisfactory.

Dwarf Mugho P. (*P. m. m. compacta*): Compact, uniformly symmetrical habit; better for formal use.

Swiss Stone P. (*P. cembra*): Dense, pyramidal form; foliage brighter green through winter than most; hardy to New England, but requires moister soil than White Pine.

Japanese Globe P. (*P. densiflora globosa*): A dwarf, globose form of Japanese red pine.

Japanese Umbrella Pine (*Sciadopitys vertillata*): Not a true pine, but distinct species. Horizontal branches, and peculiar long, wide needles or leaves, in whorls, give distinct Japanesque appearance; good for back of rock garden, or as picturesque specimen.

DECIDUOUS EVERGREENS

A few of the evergreens are a marked exception to the class in that they drop their foliage annually in the autumn. They

are little used, but have their place, because they are quite distinct from other evergreens, even when in foliage, and also because there are occasions when it is desirable to have an evergreen through the summer which, by dropping its leaves in the fall, will allow the sunshine to come through freely.

Baldcypress (*Taxodium distycum*): A tall evergreen native to Southern swamps, but hardy as far north as Massachusetts, and growing well in ordinary soil; drooping foliage is feathery and of a peculiar light green, making it the most delicately graceful of any tree of its size; why the Baldcypress has not come into more general use it is difficult to say; a fine tree to select for something at once out of the ordinary, and unusually beautiful.

American Larch (*Larix laricina*): The "Tamarax" of our Northern swamps; narrow, pyramidal habit, becoming irregular, picturesque, with maturity; extremely hardy and will grow either in wet or ordinary well-drained soil.

EUROPEAN LARCH (*L. europæa*): Pyramidal in habit, but very Japanesque in general effect; grows rapidly with a very long spirelike leader; the bark is rough and of a characteristic color, lighter in spots where it peels off; the new spring growth is particularly beautiful, deepening in color during the summer and assuming an attractive yellow shade in fall; one of the best trees for light, sandy soil. The weeping form (*pendula*) makes a particularly graceful and fascinating specimen.

Japanese Larch (*L. leptolepsis*) (*kæmpferi*): Wide-spreading horizontal branches, curving upward; reddish brown bark; bluish gray foliage; hardy and grows well under a wide range of conditions.

CHAPTER VII

SOILS AND FERTILIZERS

The adaptability of most evergreens to widely varying soil conditions makes it possible to grow them in any locality where the climate is suitable.

Frequently failure, or indifferent success, is ascribed to soil conditions when it may be due almost entirely to unfavorable climatic conditions. Wherever in the preceding pages some particular type of soil has been mentioned in connection with species or varieties of evergreens, the reference has been rather to the type of soil in which they are usually to be found growing, or which they seem to prefer, than to any soil requirements essential to their well-being. The white pine, for instance, thrives on extremely dry, sandy hillsides. On the hilly farm where I grew up in Connecticut, we had magnificent specimens in sandy, gravel soil which seemed incapable of supporting any other kinds of plant growth except the omnipresent white birch. And yet a few equally fine pines grew in the neighboring swamp of maples and alders, where the roots were actually submerged in water for considerable periods through the winter and spring! During the past year, I had occasion to move, for some landscape work, a large number of native redcedars. Some of these grew in soil so light and sandy that it was impossible to take them up even after heavy rains; others, within half a mile, grew in soil so heavy that it could be cut out like cheese; and along the shore, within half a mile in the other direction, there are wind-beaten and storm-twisted specimens which have survived for scores, if not for hundreds, of years in sea-sand dunes which are barren of all but the few

forms of vegetation peculiar to them. The evergreens have come down to us from an age predating the origin of most of our other trees and plants, and their facility in finding nourishment wherever they succeed in getting a "toe hold" may have something to do with their survival.

Mechanical Condition of the Soil

But if the evergreens are comparatively indifferent to the character of the soils in which they grow, they are not at all so in some other respects.

Drainage. Almost all evergreens are hill dwellers. In nature, they are found on mountain slopes, on steep valley sides, and in precipitous ravines. Here, whatever the soil character may be, one thing is assured—good drainage. And good drainage, no matter where or how they may be grown, most of them insist upon. To satisfy my own curiosity I once dug around one of the white pines growing in the swamp referred to above; I found a deposit of sandy gravel entirely unlike the surrounding muck and peat, which answered for the neighboring swamp maples and alders, and in which not a single pine existed. That told the story!

Moisture. Evergreens require a tremendous amount of moisture. Unlike deciduous trees and shrubs, their moisture requirements continue throughout the winter months.

As they grow naturally the moisture requirements of evergreens are met by two conditions which are likely to be absent in artificial culture. In the first place, they are usually found growing where rocks are abundant—and rocks are among nature's most efficient moisture conservers. This statement may sound astonishing, but any one who has ever tramped around much through the fields and woods knows that a large stone or boulder always means cool, moist soil and a matted mass of active roots around or under it. The moisture-holding quality of stones is well recognized in rock-gardening.

In the second place, almost without exception evergreens as they grow in the wilds form large groups, if not forests. They are distinctly gregarious, and under the canopy of their

interlaced limbs, the accumulation of many years' fallen needles, decaying very slowly, has formed a moisture-conserving, matted mulch. On the hottest day in the dryest weather, dig down with your hand a few inches, and you will find the soil cool and moist, even though it may be light and sandy.

Preparing Soils for Evergreen Culture

How, then, shall we prepare our soil to give such evergreens as we plan to plant the best chance to succeed?

Far too often no preparation whatever is made; a hole is dug and the evergreen is set in; or possibly half-fresh manure or chemical fertilizers, both likely to injure the rather fleshy roots, are employed. Evergreens cost too much to be mistreated in this manner. It is reasonable to take extra pains in providing for their well-being.

Three things may be done in advance of planting:

Supply good soil.

Provide soil drainage.

Increase the soil's moisture-holding capacity.

Good Soil. Fairly rich, friable garden loam will suit most evergreens. Very light, sandy soils may be improved by adding clay or loam; clay soils, by adding a sandy or gravelly soil, to make them more open or friable. Even if the entire soil area cannot be altered, it will help greatly to improve the soil in the holes where the trees are to be planted.

For foundation plantings, where poor soil, clay, subsoil, or rubbish have been used for filling in around the cellar walls, as is frequently done, it will pay to *remove all the soil* to a depth of two feet, and the width of the strip to be planted, and replace with good loam.

Drainage. If the subsoil—the stratum lying under the surface six to twelve inches of soil—is hard and impervious to water, it should be broken up with a pickax, or with agricultural dynamite, before planting. This is especially important in the planting of specimen trees, which it is desirable to have attain full size.

Light gravelly soil, wood ashes, or plain coal ashes will help

greatly to improve the drainage in the surface soil. They should be dug in to a depth of at least twelve inches.

Moisture. The moisture-holding capacity of the soil, which is vital, may be increased tremendously by adding either wood or coal ashes, or some form of humus, to the soil before planting. Leaf mold from the woods is good. The best and most convenient material I have found for this purpose is granulated peat moss, such as is used in great quantities in almost all evergreen nurseries. This is brown, light, spongy material which will absorb and hold more moisture in proportion to its weight than any other substance available; it should be spread two to four inches deep where the trees are to be planted, and then dug well into the soil.

Manures

Ordinary stable manure is good for evergreens, but cow manure is much better. Manure for evergreens should be so thoroughly decayed that it is almost like black soil. Mr. George P. Brett, whose extensive planting of evergreens near Stamford, Connecticut, is one of the largest private collections in this country, has had excellent results from using liquid cow manure, applied three or four times, at intervals of ten to twenty days, after planting. This has proved particularly beneficial to backward or ailing trees.

The most practical way of utilizing manure on growing trees is as a surface mulch (see page 65).

Fertilizers

Few experiments have been made with fertilizers for evergreen culture, and these have not yielded very definite results. Evergreens seem to prefer to remain wild and untamed, in this as in many other respects. A tree in a spot which suits it will often grow much more vigorously than its neighbors, without any discernible cause. The best fertilizer I know for the planting of evergreens is the old standby, bone. I use a mixture of one-third fine bone meal and two-thirds very coarse bone, which takes several years to decay in the soil. The grade

known as "Texas bone" is the best I have found for this purpose, but it is not always possible to get it.

For soils in poor condition I have used cottonseed meal or tankage to supply nitrogen, and wood ashes for potash, with good results. Nitrate of soda, or urea (floranid) are the quickest-acting nitrogenous fertilizers. They may be applied in liquid form, in place of the liquid manure mentioned above.

Soils for Broadleaved Evergreens

Most of the broadleaved evergreens, such as rhododendrons, azaleas, laurels, and the like, belong to the ericaceous or acid-loving group of plants. Some of the coniferous evergreens, such as the Hinoki Cypress, also require acid soil.

The simplest way to provide a special soil for these is to dig into the ground where they are to be planted a generous quantity of hardwood leaf mold, or leaf mold and soil, from a spot where laurel and wild huckleberries or blueberries naturally thrive. If this can be obtained from marshy spots or low hollows where water accumulates, so much the better. If it is not convenient to get this, granulated peat may be spread over the surface from three to six inches deep, and well forked into the soil. Aluminum sulphate, used as a fertilizer, makes soil acid, just as lime makes it "sweet"; apply it broadcast at the rate of from five to eight pounds for one hundred square feet. This material, combined with peat or humus, is used in several ready-prepared acid soils such as "rhodono."

CHAPTER VIII

PLANTING AND TRANSPLANTING

Careful planting is one of the essential steps to success with any plants. With none is it more important than with evergreens.

Evergreens are unusually difficult to plant and transplant. They have a few straggling large roots rather than a mass of small ones, such as most perennials and many shrubs develop. Then there is no season of the year when they are so dormant that the tops transpire little or no moisture, as is the case with all deciduous trees and shrubs, and perennials. In the third place, the tops cannot be pruned back in transplanting—as can those of most shrubs, trees, and perennials—without serious and often permanent injury to the beauty of the plant.

Let us realize, then, that the planting of evergreens offers a special problem, and do everything possible to meet it.

Preliminary Precautions

The first step in the successful planting or transplanting of evergreens is the handling of the plants themselves. The home owner usually buys his evergreens from a nursery; but sometimes moves trees growing on his own place, or transplants them from the wild.

Nursery-grown Plants. The purchaser who is inclined to buy on price alone is likely to make costly mistakes with evergreens. The real value of evergreen plants of the same variety, age and size depends upon how they have been grown, how often they have been transplanted or root pruned, and how they are packed.

The most satisfactory way to purchase evergreens when practicable is to select them yourself at the nursery. This is espe-

cially true of varieties which have strong individual character, such as Meyer juniper, Sargent hemlock, and Koster redcedar.

In any but the very smallest sizes, it is always best to buy evergreens "B. & B.," that is with a ball of soil about the roots securely wrapped in burlap. This not only increases their chances of living, but also saves practically a year's growth. Large trees may be further safeguarded by having the wrapped ball of soil fastened to a wooden platform.

Trees to be moved about the place should be dug with the utmost care. Unless the ground is moist from recent rains,

Evergreens with bare roots are difficult to transplant; always order "B. & B."—balled and burlapped. Plants in wire baskets may be set out at any season.

saturate it thoroughly with the hose before digging. A good plan is to mark a circle of suitable size around the tree, and then dig up about twelves inches on the *outside* of this with a *fork,* so that the roots may be saved. This makes it possible to get more of the roots without having a ball of earth too large to be handled. Very large trees may be moved, with the proper equipment. For this purpose, however, it is better to secure the services of a professional tree mover.

From the Wild. In some localities, cedars, pines, hemlocks, or spruce may be had for the gathering. It is much more difficult to make such trees live than nursery stock, because they have one main root and but a few large side roots, instead of the much more compact and fibrous ball of roots developed by

nursery stock as the result of frequent transplanting and root pruning. Hence the amateur, with but a few trees to set out, will usually find it more satisfactory to buy nursery stock. For those who wish to experiment with transplanting trees from the wild, however, here are a few suggestions. The younger the tree handled, the better the chances of success. Get as much soil with the roots as possible, and handle it gingerly, so that it will not be broken in transporting. (Use burlap and a platform for larger-sized trees.) *Keep the roots constantly moist at all stages during the transplanting.* Protect from wind (see page 66). See that the roots never lack for moisture during the first season after transplanting. Gathered trees will require much more attention in this respect than the nursery-grown stock.

Broad-leaved evergreens, from the woods, such as laurel and holly, are easier to transplant. If these are moved early in the spring, and the old foliage stripped off, so as to reduce the amount of evaporation, they are not difficult to handle.

Baby Evergreens for the Home Nursery

Often it is desirable to get seedlings, or two- or three-year-old "transplants," to grow on to a larger size for future use. These are now offered by several of the leading nursery concerns. This is also the most practical way of using native material from the woods.

It is not difficult to get these baby trees to live, *if* the roots are kept moist from the time they are taken up until they are safely planted. Exposure to sun or wind will quickly dry out the coarse roots, then the resinous sap "sets" and moisture no longer has any effect.

Seedlings gathered in the wild should be immediately wrapped in sphagnum moss and tied in secure bundles. I have gathered and carried seedlings for nearly two weeks before they were planted, when they were still in perfect condition. Small plants from the nursery should be unpacked immediately upon receipt and "heeled in" if the soil is not ready for planting. Place the roots in damp soil or better, peat moss, until they can

be set out, and *keep moist.* Do not wet the tops. Unless in a shed or cellar, protect with covering of old bags or straw.

Prepare a bed about 4 feet wide in good well-fined soil, such as a corner of the vegetable garden. Set the little trees 4 to 8 inches apart, in rows 6 to 12 inches apart. Spread the roots out naturally and press the soil firmly about them, but leave it loose on the surface. Mulch the surface with peat moss or leaf mold.

Keep out weeds, or they will soon smother the tiny evergreens, which grow slowly at first. As dry weather approaches, *mulch the entire surface of the soil* with leaf mold, buckwheat hulls, or peat (moss); the latter material is the best.

In nature, practically all baby evergreens *begin life in the shade,* and it is essential to reproduce this condition if we expect them to succeed. As soon as they are set out, drive stakes along the edges of the bed to support a light framework, over which should be stretched loose-mesh burlap (such as onion sacks are made of), tobacco cloth, or lath-and-wire screening. Nurserymen use the latter, and it is offered in some catalogs. This shading should be left in place all the first year. Also mulch lightly with peat moss, both to keep soil moist and to protect plants against being beaten down and spattered with mud, which is injurious and sometimes fatal.

The little plants may be transplanted again at the end of one or two years, or, if carefully protected, planted out.

When to Plant

Under favorable conditions, and with trained help, evergreens may be transplanted at almost any time of the year except when they are making maximum new growth in early summer. It is better, however, to do the planting either very early in the spring just as the buds begin to swell, in March or April, or late in the summer—late August into October—when growth is inactive. August planting is not advisable unless there are abundant rains, or plenty of water is available. Very late fall planting is not advisable.

A simple scheme developed by Mr. Walter Hillenmeyer,

President of the American Association of Nurserymen, makes possible the safe transplanting of evergreens at any season and reduces to a minimum the chances of failure. This consists of placing the trees, when they are set out in the nursery, in wire-mesh baskets made for the purpose. These hold the soil and roots in a solid mass when they are taken up.

Placing Before Planting

The greatest care should be taken to get the exact location for each plant before putting it into the ground. A slight

Before you set out your plants, arrange them carefully to determine the exact positions where they will look best.

change in the relative positions of the plants may make a great difference in the general effect of an evergreen grouping.

The location of each plant may be marked in advance by stakes. These may be made conveniently from ordinary plastering laths; and if they are cut in varying lengths, to represent roughly the heights of the evergreens, they will give a very fair idea of the silhouette of the planting. When the evergreens are received, they should be placed in position before planting is begun. Mark the exact locations, move the plants to one side, and dig the holes for planting.

The Details of Planting

Immediately upon arrival, the cases or the balled and burlapped plants should be placed where they will be protected

Dig hole 3 times size of ball
Removing the Burlap
Watering the roots
Stamping ground around roots
How to Plant Evergreens
Staking

from both wind and sun. A cool cellar is the ideal place. Next, *moisten the roots thoroughly,* by soaking the moss tied about the roots, or the burlapped balls of soil, in a moderate amount of water placed in a pail or tub. (Do not use enough water to loosen the earth about the roots.)

Heeling In. If planting must be delayed, dig a trench in a sheltered, shady spot—preferably under cover—deep enough to accommodate the roots or balls. Twelve to eighteen inches deep and wide is generally sufficient. Bury the roots in this, setting the plants close together, and packing soil—or better, half soil and half peat moss—close about the roots. Water frequently enough to keep constantly moist.

Preparing the Holes. Unless the soil has already been prepared, dig out holes about twice the diameter of the soil balls, and twelve to eighteen inches deep.

Be sure of the drainage (page 53), and fill in the bottom of the holes with good soil (page 53) to a point which will take the soil ball, leaving the tree an inch or so deeper than it was growing before, when the hole is filled level full.

Use of Peat Moss. I have found nothing so useful in the transplanting of evergreens as an abundance of ground peat moss (see page 55) mixed with the soil used in the holes and filled in about the roots. This spongy material *acts as a reservoir for water right at the roots of the plant,* where it is needed. If the soil is stiff, as much as fifty per cent of peat may be added. In lighter soil, half that amount.

Watering. If the soil is dry, fill the hole full of water two or three times and let it soak away, before putting in the prepared soil. Set the tree in place—being careful not to yank it by the top, loosening the ball of soil—and then cut away the burlap. This is better than removing the burlap *before* setting the plant in place. In fact, it is not necessary to remove it at all: merely cut it away from the top of the soil ball. If the burlap is very thick and heavy, make numerous long slits in it with a knife blade.

Fill in the prepared soil around the roots, and tamp it in solidly with a blunt stick or tread it in with the feet. When

Even so few as a half-dozen medium-sized evergreens will transform the appearance of the entrance to a house!

A garden—a real garden of evergreens! You may not have room for one of your own, but if you are in reach of an Arboretum, or a park where there is a collection, be sure to visit it.

the hole is two-thirds full, pour in water and let this soak away. Then fill nearly to the surface, packing firmly. The top two inches of soil should be left loose. *Do not mound up the soil* around the stem; leave it shallowly saucer-shaped, so as to catch and hold water.

Staking After Planting

Next to losses from drying out, the loosening of the roots in the soil as a result of the wind swaying the tops of the plants causes the greatest fatality in newly-set evergreens.

The only way to prevent this is to support the tree. Tie fairly large specimens, eight feet or more tall, from three directions; see accompanying illustration. For smaller trees, of slender growth, such as cedars, a piece of old three-quarter or one-inch pipe, painted green, and driven firmly into the ground near the tree, will form a substantial and inconspicuous support. Burlap or a piece of old rubber hose placed around the wire or rope where it touches the tree, will prevent injury to the bark. Evergreens in groups help to support each other, making staking less necessary.

Mulching After Planting

Having thus given your evergreens a good start, the next important step is mulching after planting. See Chapter IX.

Who Shall Do the Planting?

This question cannot be categorically answered.

If you have had considerable gardening experience, you will probably want to do the planting yourself, and there is no reason why you should not. If your plants have come from a distance, and no local nurseryman or gardener is available, you may have to do it.

The successful planting of evergreens, however, is not the easiest of home-gardening jobs. The suburban home owner who may be new at the game, and who is buying his plants from some local nursery or landscaping concern, will usually do well to have the planting included.

CHAPTER IX

GENERAL CARE

Most evergreens which fail to live die within the first twelve months after being planted. Any one who sets out evergreens should do so with the realization that they will have to be given some attention. Once established, they will get along with less care than almost any other class of plants. For this reason, and also because the cost of the trees is comparatively high, the planter will find it well worth while to give them the care they require when they need it.

Care After Planting

Perhaps the most important single thing to guard against during the first season is the drying out of the roots. The best method of watering is to use some type of irrigator or sprinkler which throws a fine, mistlike spray, and which may be left running for several hours, soaking the ground clear through to the subsoil without packing it or making it muddy. The drenching which the tops get at the same time is also beneficial. Applying water in this manner is much more effective than with the hose. The watering should be done, preferably, late in the afternoon or evening, and during dry weather should be repeated frequently enough so that the ground will never get really dry between waterings. Daily "sprinkling," however, is neither necessary nor desirable. In exposed positions where the plants are subjected to continuous winds, evaporation is so rapid that it is difficult to keep the foliage sufficiently supplied with moisture; under such circumstances it will pay to erect a temporary protection of boards or a couple of thicknesses of heavy burlap, to shield the plant both from excessive drying out and from the constant swaying

of the tops, which greatly interferes with the roots becoming established in their new location.

Mulching. No matter when planting is done, mulching will be found of great benefit. During the winter it prevents the alternate freezing and thawing around and above the upper roots, and during the summer it conserves moisture and keeps the soil considerably cooler than when it is exposed fully to the direct heat of the sun. This simple precaution, which may save the life of the tree, is often entirely neglected.

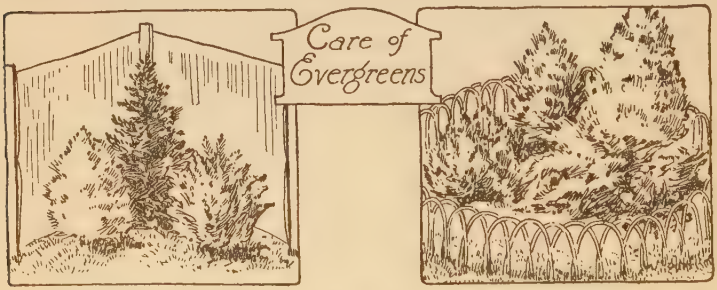
The mulch should thoroughly cover all the soil surface from the tree to the circumference of the hole in which it has been planted, and preferably three or four inches beyond. Half-decayed leaf mold, which may be gathered in burlap bags in almost any piece of woodland, is a good mulch. Granulated peat moss is ideal for the purpose. A mulch of either of these materials, two or three inches deep, will lessen by nearly half the amount of water necessary to keep the ground around the roots beneath it properly moist.

Weeding and Cultivating. It may hardly be necessary to put in a word of caution as to the necessity of keeping newly planted evergreens free from the weeds which are sure to start promptly and vigorously close around them. And yet it is easy to neglect these, particularly during rainy weather or vacation time, with the result that these robbers of plant food and moisture are given the opportunity to accomplish material injury. Keep the weeds out while they are small! The handiest implement for this purpose is a pronged or finger weeder on a long handle.

The soil around the newly painted trees *should never be allowed to become hard or packed* on the surface. Keep it fine and loose for two or three inches down—in the same condition you keep the soil in your vegetable garden. This will require but a few minutes to each tree every ten days or two weeks. It is not the time required, but the fact that one does not think of it, which prevents this beneficial cultivation being done. Make yourself do it two or three times after the trees are set out, and you will get the habit!

Thorough mulching will greatly lessen and often entirely eliminate the necessity of weeding and cultivating. The few weeds which may force themselves through the mulch are conspicuous and are readily pulled out by the roots, instead of breaking them off and allowing them to start over again, as so frequently happens in hard soil. This is another advantage of mulching which would make it pay for itself even though there were no other benefit.

Staking. The necessity of firmly supporting large trees has already been emphasized (see page 63). Many smaller evergreens, especially those of prostrate or spreading growth and



Protect from driving, drying winds, especially during winter: and also from stray dogs.

others which do not naturally tend to have a strong central upright "leader," may well be staked with bamboo or small-sized iron pipe for the first season or two. It keeps the former from being broken or knocked out of position, and gives the latter a "straight start." For tying, some soft material, such as raffia, vegetable string, or narrow pieces of cloth, should be used; an old typewriter ribbon makes good tying material; it is strong but will not cut into the bark.

Beware of Dogs! Where there are stray dogs, the lower limbs on newly planted evergreens are often ruined. Not infrequently, small trees are actually killed from this cause, and, of course, these are always the choicest and most expensive varieties! Don't take any chance on having part of your evergreen planting ruined, if there are dogs running at large

in your vicinity. Wire wicket garden fence, eighteen inches high, will afford protection. If this is painted green, it will not be conspicuous. Very often a row of Japanese Barberry plants may be set out in front of the evergreens. They need not be set as closely together as they would be in planting a hedge. Box Barberry (*Berberis thunbergi minor*) is a dwarf-growing form which is tall enough for this purpose.

Pruning

Evergreens require so little pruning that no pruning at all is often advised. It is true that no pruning is better than too much or improper pruning. Nevertheless, there are times and conditions when some pruning may be done with benefit to the tree.

Securing Symmetrical Development. Evergreens, like all other trees and plants, tend to resume a natural form and habit of growth regardless of how they are pruned. They are most beautiful when allowed to acquire their natural form. The object of such pruning as may be done should be to assist them to do this, rather than to attempt to change their shapes. Spruces, firs, and some of the pines which naturally make a more or less regular pyramidal growth, are handsomest when their development is fairly symmetrical. If for any reason, some of the branches do not keep up with others, the growth may be "evened up" by pruning back the more vigorous branches, thus restoring the symmetry of the tree. Such "pruning" is best done by removing the terminal or central buds of the stronger branches, as soon as the discrepancy in growth is noted. This may be done with a small knife or even with the fingers. Or the previous season's growth may be cut back to a branch or cluster of branches. This light pruning or pinching back has a double effect: it stimulates the growth of the weaker branches elsewhere on the tree, and also forms a more dense or bushy growth of the small side shoots or branchlets on the limb which has been pinched back. This pruning should be done during late spring, or early in summer. The new buds just below where the branches have been removed, will continue to grow straight

out, following the original direction of the branch; and in a season or two, no evidence of the pruning will be obvious.

Lower branches of evergreens should not be removed. This is particularly true of firs, spruces, pines, or hemlocks, and other trees of similar character. Such trees, growing with naked trunks, look stiff and unnatural, unless they are so close together as to form a grove, in which case Nature herself will attend to all the pruning necessary.

Pruning for Special Shape. The preceding paragraph applies to trees which one wishes to make a natural growth. Where evergreens are used for formal hedges, or for specimens such as "pyramids," or "globes," in more or less formal landscape work, not only a particular shape but also a smooth, dense foliage surface is required. This is a special form of pruning which is perhaps better designated as "shearing" or "trimming." Evergreens with many small branchlets, and with so-called "soft" foliage—such as arborvitæ, junipers, cypresses, yews, and hemlocks—are naturally much the best suited to treatment of this kind, although some of the spruces and pines are often used for tall hedges, and respond satisfactorily to surface shearing.

Such pruning, for the best results, should be done frequently —at least once each season, after new growth has been made, and preferably oftener. Hedge-trimming shears, preferably of the multiple-blade type, should be used.

A form of pruning little employed in this country, but which the Japanese have developed to a genuine art, is that of shaping trees to picturesque or even grotesque shapes, formed to suit their particular style of landscape architecture, or to simulate great age. It is needless to say that pruning of this kind should be undertaken only with caution. There is no reason, however, why the amateur who is interested in this kind of garden work should not try his hand at it, if he is willing to do some experimenting, with the consequent risk of spoiling a few plants.

Pruning for Size Control. Very often it is desirable to keep an evergreen within a certain height, or to have it remain otherwise in proportion to the rest of the planting in which it

has been used. Some of the larger-growing evergreens, such as hemlocks and cedars, lend themselves much better to this purpose than others, such as firs, and most of the pines.

The all-important point in pruning for control of size is to *begin before the plants have grown too large.* If one waits until a tree has outgrown its space, so that it must be "beheaded" to be brought back to the desired size, there is no possible way of concealing the butchery. If, however, one anticipates by two or three years, the necessary pruning may be fairly well concealed. The leader or main stem should be cut off well *below* the maximum height permitted, and the smaller branches allowed to take its place. Lateral or spreading branches may often be cut in such a way that the pruning is completely concealed, smaller branches from other limbs covering the cut, in somewhat the same way that shingles overlap. Upright-growing specimens of the Pfitzer juniper, for instance, often get too tall. If taken in time, they can be kept within bounds without the pruning being conspicuous. In pruning evergreens, however, one thing must be kept in mind; they will not produce new shoots from adventitious buds on bare limbs, as most shrubs and deciduous trees do. Limbs once bare will usually remain so, and must be left as they are or removed entirely.

Pruning to retain a certain size will produce a much thicker and stockier growth than normal; this, however, is not always a disadvantage, especially in foundation and group planting. Even when this is not desirable, however, it is often preferable to the alternative of removing the tree entirely.

Pruning Broken and Injured Trees. Often the top or "leader" of an upright-growing tree, such as spruce, fir, or pine, is accidentally broken; or, as frequently happens with white pines, the weevil may destroy it (see page 74). Side branches are frequently damaged in one way or another, or injured during the winter.

Pruning may save such trees. Ordinarily, it is not difficult to establish a good new leader by selecting one of the strongest shoots below the injury, and tying it securely but not too tightly in an upright position to a stiff stake. It is often diffi-

cult to see after two or three seasons' growth that the tree has ever been repaired.

Cutting back injured tops or branches to sound, live wood will stimulate vigorous new growth beneath the cut, and frequently saves trees which would otherwise slowly die and have to be removed. If the roots are well established, most evergreens will stand very severe cutting back. One frequently sees beautiful bushy little redcedars in an old pasture or mowing lot, where the original seedlings have been cut off close to the ground with a mowing machine. One of the most beautiful lawn specimens I ever saw was a white pine which had been badly broken and cut back, and as a result developed several leaders of equal growth.

Pruning Broad-leaved Evergreens. The broad-leaved evergreens require very little pruning; they are naturally more or less irregular, and it is neither necessary nor desirable to attempt to give them a symmetrical form. They may be slightly cut back after blooming, if getting straggly or out of bounds. In very old specimens, it may be desirable to remove some of the old wood entirely to make room for the newer growth.

Root Pruning. While this is very important in the nursery, to secure plants which will ship and transplant successfully, it concerns the home gardener only when he has trees which, for one reason or another, must be transplanted. In this event, pruning the roots six months or a year in advance of the transplanting will be of decided advantage, especially with trees of considerable size. This may be accomplished by cutting entirely around the plant with a sharp spade or lawn edger, in a circle the circumference of which corresponds with the ball of earth later to be taken out with the tree. The object is to develop a mass of small fibrous feeding roots near the base of the tree, to take the place of those naturally formed nearer the ends of the long-spreading main roots. If the tree is to be transplanted in the autumn, or with a frozen ball in winter this should be done fairly early in the spring.

CHAPTER X

INSECTS AND DISEASES

For every ornamental evergreen seriously injured by insects or diseases, probably a thousand perish from such causes as improper planting, exposure, general neglect, or the selection of varieties not suitable for the location where they are set out.

If growth is normally vigorous and healthy, neither insects nor diseases are likely to prove a serious menace. They may temporarily disfigure or injure the tree; but if growing conditions are favorable, usually no permanent damage will have been done.

Occasionally some pest will attack a tree no matter how thriftily it may be growing. Watch for all of them, and take promptly whatever action may be practicable to eradicate or at least control them.

Insects

While there are quite a number of insects which attack the various evergreens, we have sought to simplify their identification and control for the beginner by describing them under four general groups as follows:

Aphides, or soft-bodied plant lice;
Scales;
Worms and Grubs;
Borers, Beetles and Mites.

Aphides

Several species of plant lice or aphides attack evergreens. In general, they are similar to the well known and universally detested plant lice that do so much damage in the vegetable and the flower garden. These tiny, soft-bodied insects do not

chew, but *suck* the plant juices from beneath the bark. While doing little damage in most seasons, if conditions happen to be favorable they may be present in such tremendous numbers as to cause considerable injury. Occasionally they even kill a tree.

Pine-bark aphid attacks particularly the white pine; sometimes, to a less extent, Scotch and Austrian pines. It is easily discernible because of the white, waxy covering which makes it conspicuous where it gathers in quantities on the smooth bark, or at the base of the clusters of needles. To control, wash off with a stiff stream of water from a hose nozzle, or spray with kerosene emulsion or with Black Leaf 40.

Spruce-gall Aphid. Attacks Norway and white spruces. It can be identified because of the peculiar galls, about an inch in length, which it forms and which look like tiny pineapples. To control, spray during late winter or early spring, before the new growth starts, with a miscible oil, such as Scalecide, or with a strong whale-oil soap solution—one pound to two gallons of water. The galls may be cut off and burned any time before they open, in late July or August, but as this somewhat disfigures the tree, spraying is preferable.

Somewhat similar plant lice which make galls attack the Colorado blue spruce, and also the red and black spruces. On the former, the galls are similar to those above, but form at the tips of the twig instead of at the base. On the latter, they make cone-shaped galls, which somewhat resemble the seed cones of the tree. Control measures are similar to those above.

Larch Aphid. The larch is attacked by an aphid covered with waxy wool. It appears at the base of the leaf clusters in early May. Spraying with kerosene emulsion at that time is effective.

Scales

The Austrian pine and some other similar hard-pine varieties are quite likely to be attacked by the pine-leaf scale—somewhat similar in form and appearance to the scales found on fruit trees, but so small they can distribute themselves along the needles. When present in numbers, they give the branches,

or even the whole tree, a sickly, grayish color. The needles turn rusty and finally fall off.

Like other scales, this must be hit directly with a contact spray. Use Black Leaf 40, with soap or casein added, in May or early June. Or spray with some miscible oil, such as Scalecide, in late spring before the new growth starts.

Worms and Grubs

Damage is sometimes done by the larvæ of several borers and flies which at times appear in sufficient quantities to destroy limbs, or even the entire tree.

The Gypsy Moth is perhaps the most serious of these. The moth itself is a grayish miller about two inches long, which lays its eggs in the autumn, in distinctive oval egg masses covered with hairs from the moth's body. The young caterpillars hatch out in early spring, about the time the leaves are starting, and feed greedily. By midsummer, they have attained full growth, about two inches long. The caterpillar shows eleven distinct segments, the first five with pairs of blue tubicles, and the last six, dark red. The egg masses may be killed in winter by painting them with creosote. Spraying with arsenate of lead, as soon as the small caterpillars *begin* feeding, will successfully poison them. Tree Tanglefoot will protect uninfested trees from crawling caterpillars.

The Bagworm, or basket worm, is readily distinguished because of the tiny pendant bag or basket, made up of small bits of twigs or leaves and silk. Nipping off and burning the bags affords effective control. If they have been left on, spray in early June, as soon as the larvæ have hatched from the bags, with arsenate of lead.

The *Pine Sawfly* is, in the larva stage, yellowish white in color, and about three-quarters of an inch long with rows of rectangular black spots. It attacks the foliage of individual branches, and sometimes of whole trees, of various pines. As the insect winters in trash on the ground, raking up and burning fallen needles and débris will destroy most of them, where there are but a few trees to be cared for. The larvæ may be poisoned

by spraying with arsenate of lead when they are beginning to feed, in May or very early June. A somewhat similar sawfly attacks the larch. This may be controlled by the same methods.

The Spruce Budworm may be distinguished by the way the small caterpillars cut off the needles at the base, and then bind them together in a loose webbing which makes a shelter. They start working in the spring as soon as new growth develops. They may be controlled by spraying at this season with arsenate of lead.

The *Larch Case-bearer* often disfigures both European and American larches. It is very easily identified by the way in which it makes a tiny house from a section of a leaf which has been eaten out, and which it carries about with it. The half-grown larvæ hibernate in these "cases," which they attach firmly to twigs, some lying flat and others standing at different angles. They may be controlled by a dormant spray of lime sulphur, 32 degrees Baumé, one gallon to eight gallons of water.

Borers, Beetles, and Mites

Most borers and beetles do not attack healthy, living trees. They are, therefore, of comparatively minor importance, since the trees are usually beyond hope before these pests appear. Some, however, attack healthy, live trees.

The White Pine Weevil is one of the most annoying of these. It is especially exasperating, like the cutworm in the garden, because it destroys a great deal more than it actually utilizes for food. The damage is done by the small grubs, which burrow into the bark and tissue of the topmost shoots, killing all growth above. Usually they select the leader, thus deforming the tree. Spraying with lime-sulphur solution (see above) about May first, before the leaves appear, is the best preventative thus far found. Or the beetles themselves—small brown insects with long snouts and a whitish spot near the lower end of each wing—can be jarred from the tree during April or May when they first appear. They may be caught in mosquito netting or some other material and destroyed. Usually, this will have to be repeated, two or three times, at

intervals of a week or so. When the leader of the pine has been destroyed by the pine weevil, a new one should be trained in its place (see page 69).

The Pitch Mass Borer often attacks pines, causing the exudation of unnatural masses of gum or pitch. This may be cut away, and the borer killed where it is at work in the inner bark.

The Red Spider, which attacks many garden plants, also occasionally infests evergreens. It is not a spider at all, but a tiny mite, one-fiftieth of an inch or so in size, which sucks the juices from the under side of the leaves, causing an unhealthy, rusty or brownish appearance, and sometimes the dropping of the needles. The red spider thrives in extremely dry atmosphere, and seldom causes damage except in very dry weather, and then usually in the more Southern states. Forceful spraying with cold water, hitting the under sides of the foliage as much as possible, and spraying the tops of the plants as well as moistening the soil in dry weather, will tend to hold it in check. The most effective spray for the red spider is colloidal sulphur, mixed with lubricating oil.

Diseases

The number of diseases likely to attack evergreens planted for ornamental purposes is much smaller than the number of insects, which is fortunate, since there are no very satisfactory methods of control.

White Pine Blister Rust. This veritable scourge of the white pine has been so destructive in some sections as to discourage the planting of this fine tree. As it does not appear on the surface of the bark until several years after the tree has been infected, the amateur can do little to control it. The professional tree surgeon may be called upon to help save valuable old trees.

However, those who wish to set out white pines, and to guard them from the blister rust, may do so with reasonable assurance of success if they will take the precaution of having *no currants or gooseberries within three hundred to five hundred*

yards. The pine blister rust must have two victims—or "host plants," as they are called—in order to complete its life cycle. Through lack of information concerning this simple method of prevention, many persons forego the planting of white pines who might safely plant them.

Cedar apples. Many varieties of junipers and redcedars are attacked by a fungus which causes soft, spongy, orange-yellow masses which are commonly known as "cedar apples." This, like the white pine blister rust, is a "two-host" disease. It requires nearby apples, quinces, hawthorns, or some allied species. On all but a few evergreens, cedar apples may be cut out as soon as they appear; otherwise, either the evergreens or the other trees should be eradicated to stop the disease.

Insecticides and Fungicides

The various materials for insect and disease control which have been mentioned in these pages, such as lime-sulphur, miscible oil, Scalecide, Black Leaf 40, whale-oil soap, and so forth, may be purchased from most seed houses or nursery concerns. Complete directions for using are given with each material, and these directions should be followed most carefully.

The reader who desires more complete and detailed information concerning insects and diseases is referred to "The Cultivated Evergreens," edited by L. H. Bailey, where the subject is treated more fully than in any other American volume.

CHAPTER XI

SUMMARY, AND LISTS OF EVERGREENS FOR SPECIAL PURPOSES

From what has been said in the preceding chapters, it should be evident to the home gardener with a small place to develop, as well as to the owner of a large country place, that evergreens possess advantages and characteristics which give them an indispensable place in any landscape planting.

Permanent satisfaction with evergreens depends primarily upon the selection of varieties which are adapted to the purpose for which they are to be employed. The original cost is more than for most other kinds of plants, but, on the other hand, evergreens are more permanent; also they give year-round results. For all of these reasons, it is worth while to take particular care in the selection of evergreens.

In planting or transplanting evergreens, the two vital points are to do the work as promptly as possible, and to keep the roots moist at all times. It is desirable to have the holes where the plants are to be set prepared *in advance* of receiving the trees (see Chapters IX and X).

The routine care of evergreens, once they are established, should include the following:

Spring. Remove winter mulch, or fork it lightly into the soil, giving the ground around the trees a thorough cultivating to loosen it up and admit air to the roots; topdress with fertilizer if trees are not making a satisfactory growth. Do pruning necessary as a result of winter injuries; also spraying needed before new growth starts (see Chapter X).

Summer. Apply summer mulch; water thoroughly during dry weather; attend to such pruning or shearing as may be

required to control size of the trees, or maintain them in symmetrical growth. (See Chapter IX, page 67 and following.) Also midsummer spraying. (See Chapter X.)

Fall. See that ground is thoroughly moist before it freezes up for the winter—this is most important (see page 63); apply winter mulch when ground freezes; protect young plants with wind-shelters, especially in exposed positions, or for varieties planted near their Northern limits (see page 63).

LISTS OF EVERGREENS

Arranged to Facilitate the Selection of Planting Material for Specific Purposes

(NOTE. In the following list of evergreens no attempt has been made to include every variety which may be used for the particular purpose mentioned—the intention is rather to suggest typical plants which are suitable and which may serve as a guide to the beginner. There are, of course, many repetitions because the majority of evergreens are adapted to several different types of planting.

The names given are in accordance with the "Standardized Plant Names" adopted in 1923 by the American Association of Nurserymen. This system of nomenclature is coming into gradual use in American catalogs and horticultural magazines, and has greatly helped to eliminate the confusion heretofore common in catalogs and in planting recommendations.)

DWARF EVERGREENS

Dwarf Tree Forms: Dwarf Alberta Spruce; Gregory S.; Maxwell S.; Barry S. (picturesque); Arrowhead S. (semi-dwarf); Dwarf Balsam [Hudson] Fir. *Bush Form:* Dwarf Mugho Pine; Jap. Globe P.; Dwarf Irish Juniper; Tom Thumb Arborvitæ.

Globe or Egg-Shaped: Globe Redcedar; Glo. Chinese Juniper; American Glo. Arborvitæ; Ware Glo. A.; Little Blo. A.; Hovey A.; Berkman Golden A.; Siebold A.; Football Cypress.

Spreading: Koster Redcedar; Pfitzer Juniper; Jap. [Trailing Chin.] J.; Meyer J.; Spreading Jap. Yew; Spreading Eng. Y.; Ramshorn Y.

Creeping or Procumbent: Creeping Juniper; Waukegan J.; Squmata J.; Savin J.; Tamarix S. J.; Prostrate Eng. Y.; Jap. Spurge.

Tall Evergreens

Pyramidal: American Arborvitæ; Ware [Siberian] A.; Atlas Cedar; Deodar C.; Lebanon C.; Most of the Firs, Spruces, and Hemlocks.

Columnar: Pyramidal Redcedar; Hill Silver [Colorado] Juniper; Column Ch. J.; Irish Juniper; Swedish J.; American Pyramidal Arborvitæ; Rollinson Golden [Yellow Column] A.; Blue Column Lawson Cypress; Italian Cy.; Nookka Cy.

Tree-Shaped: Jap. Cedar; Jap. Yew; Chi. Y.; most of the Pines; Larches; Holly.

Bushy and Bush-shaped: Sawara Cypress, various; Hinoki Cy., various; Maxwell Spruce; Barry S.; Dwf. Canada Hemlock; Sargent Weeping H.; Mugho P.; Swiss Stone P.; Jap. Globe P.; Rhododendron, Azaleas, and various Broad-leaved Evergreens.

For Foundation Planting

Tall: Columnar varieties of Redcedar, Juniper, Arborvitæ, Yew, and Cypress (see list above). Hemlock for shady locations.

Medium: Koster Redcedar; Pfitzer Juniper; Sawara and Hinoki Cypresses; spreading Yews; and various others in "Bush-shaped list" above.

Low: Dwarf and creeping varieties of junipers, arborvitæs and yews (see "Globe or Egg-shaped" and "Creeping or Procumbent)."

NOT Suitable For Foundation Planting: Firs, Spruces and Pines in general, with exception of dwarf forms; and the Hemlocks only under certain conditions. Tall Rhododendrons and Azaleas only when there is space for other evergreens to cover lower limbs as they get older.

Boundary Plantings

Windbreaks and Screens: American Arborvitæ; Ware A.; White Fir; Veitch F.; Douglas F.; White Spruce; Norway S.; Canada Hemlock; White Pine; Scotch P.; Austrian P.; Red [Norway] P.; European Larch (for summer screen, without shutting out winter sunshine); Holly.

Hedges, Tall: Any of the above, sheared close. Upright Jap. Yew (*Taxus cuspidata capitata*). Also Tree Box (*Boxus aborscens*) Jap. Euvonymus (south of Phil.).

Hedges, Low: Spreading Jap. Yew (*Taxus cuspidata*); Dwarf Jap. Y. (*T. c. nana*); Dwarf Box (*Boxus suffruticosa*); Berberis, *bux, folia* and *julianæ.*

Group Planting

Tall: Redcedar, various; Hill Silver J.; Ware Arborvitæ; Irish Juniper; Swedish J.; Spiney Greek J.; Upright Jap. Yew; Hicks Y.; Arrowhead Spruce.

Medium: Smith Redcedar; Koster R.; Pfitzer J.; Meyer J.; Spreading J. Yew; small varieties of Arborvitæ, and Sawara and Hinoki Cypresses; Dwarf Mugho Jine; Dwarf Spruces.

Low: Squmata Juniper; Waukegan J.; Savin J.; Tamarix S. J.; Jap. Yew; Dwarf Jap. Y.; Jap. Spurge (edging).

Individual Specimens

Tall: Most varieties of Pines, Hemlock, Spruces and Fir; also varieties mentioned under "Unusual Texture" and "Colored Foliage" in lists below.

Medium: Pyramidal Redcedar: Silver Rc. Camart Rc. (less formal); Hinoki Cypress; Plume Sawara Cy.; Moss S. Cy.; Irish Juniper; Swedish J.; Jap. Yew; English Y.; Hicks Y.; Arrowhead Spruce; Mugho Pine.

Low: Koster Redcedar: Pfitzer Juniper; Dwarf Hinoki Cypress; Spreading Jap. Yew; Jap. Y.; Dwf. Mugho P.; Jap. Globe P.; Sargent Hemlock; Weeping Koster Blue Spruce.

For the Rock Garden

Background: Hemlocks; Jap. Pines (various); Swiss Mountain P.; Limber P.; Japanese Umbrella P.; Yews, in general; drooping and thread-leaved varieties of Redcedars and Junipers.

In the Garden: Dwf. Alberta Spruce, and other rather dwarf varieties; Dwf. Mugho Pine; Jap. Globe P.; Dwf. Irish Juniper; Spiney Greek J. Dwf. Jap. Yew.

Among Rocks: Squamata Juniper: Tamarix Savin J.; Pygmy Hinoki Cypress; Cotoneaster, *horizontalis* and *microphylla* (semi-evergreen); Bearberry (*Arctostaphylos*).

By Character

Formal: Italian Cypress: Pyramidal Redcedar; Columnar Ch. Juniper; Irish J.; Am. Pyramidal Arborvitæ; Am. Globe A.; Ware Glo. A.; and other close, pyramidal and globe-shaped varieties.

Natural: White Pine: Scotch P., Red P.; Hemlock; and broad pyramidal varieties of Fir, Spruce, Redcedar, Arborvitæ, etc., in general.

Picturesque: Jap. Red Pine; Jap. Black P.; Jap. White P.; Limber P.; Yews in general; Weeping Norway Spruce; Gregory S.; Barry S.; European Larch; Jap. L.

Colored Foliage: Koster Blue Spruce; Blue Colorado S.; Silver Redcedar; Hill Silver Juniper; Rollinson Golden Arborvitæ; George Peabody A.; Golden Sawara Cypress; Blue Column Cyp.

Unusual Texture: Threadleaf Arborvitæ; Standish A.; Plume Sawara Cypress; Moss S. Cy.; Dwf. Jap. Yew; Tigertail Spruce; Western Yellow Pine (P. *ponderosa*); Jap. Cedar [*Cryptomaria*]; Lawson Cypress; Bald Cypress.

For Special Conditions

Shade: Hemlocks; Canada Yew (*Taxus canadensis*); Am. Arborvitæ; to a less degree—Redcedar; Douglasfir; White Pine; Hollies; Broadleaved evergreens in general.

Dry Soil: White Pine; Scotch P.; Swiss Mountain P., and several native species; Redcedars and native Junipers in general; European Larch; White Fir (best of the firs).

Wet Locations: American Arborvitæ; native "Whitecedar" (*Cypressus sempervirens thyoides*); Hemlocks—if *drainage* is good; Baldcypress (Taxodium); Tamarax [Amer. Larch].

Exposed and Seaside Locations: Serbian Spruce; White Spruce; Scotch Pine; Red P.; Jack Pine; Pitch P.; Shore P. (P. *contorta*); Redcedars and native Junipers in general; Holly; Japanese Euonymus, *especially* good near shore, S. of New York.

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